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Articles

Coverage Issues In Products Liability Litigation As Impacted By The Restatement (Third) Of Torts

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I. INTRODUCTION/BACKGROUND

Restatements of the law play an integral role in shaping insurance coverage litigation. After all, the various Restatements often provide the framework for the underlying claims and suits that manifest into insurance coverage

(Continued on page)

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Rx for a Melee: Methods for Litigation Involving Complex Coverage or Claims (or Both!)

by Bruce Beron and John Celona

Introduction

For a number of reasons, major insurance litigation can be extremely complicated. The first source of complexity is determining the applicable policies and policy years.

Because claims may arise over a long period of time, they could potentially be covered under a dozen or more policy years. Each policy year can have five or more layers of coverage and several policies in each layer. Simply understanding the coverage on potential claims is a daunting task.

Previously, the most sophisticated tool for dealing with this issue was a coverage map. A coverage map is a graphical representation of the insurance coverage, with policies arranged in layers on a chart and the height of each policy determined by the amount of coverage. Coverage maps were originally compiled from painstaking manual compilations of policies, with the result that several versions of a single map were necessary just to show the various characteristics of the policies and layers. More recent efforts employ personal computers to generate coverage maps, but these present at best a partial picture because they don't show what would actually be paid in varying claims scenarios.

The variation in claims scenarios is a source of both further complexity and considerable uncertainty. Individual carriers may be partially or wholly insolvent, creating gaps in coverage not shown in a typical coverage map. Policies may provide coverage for just indemnity, or for indemnity and defense. Depending on the amount of claims and defense costs, and depending also on coverage and exhaustion clauses, further gaps in coverage or even increases in the effective limits of coverage may occur.

In addition, there may be, by design, self-insured gaps in particular layers. Whether these self-insured portions reduce amounts recoverable from insurers depends on the factors described above, and on which particular claims scenario actually comes to pass.

The exact amount and timing of claims is a further source of uncertainty and complexity. Which of the past and future claims must be paid will not be known until all litigation has been settled or reached judgment and exhausted appeals—a state which usually won't be reached until a distant, unknown future date.

> ***"The reality is that many very different scenarios could occur, and drawing rational conclusions in this fog of possibilities is extremely difficult without special methodologies for dealing with complexity and uncertainty."***

These sources of complexity and uncertainty make it extremely difficult for both the insured and insurers to understand what scenarios could trigger payouts, what the time profile of claims is, and what the total claims could be. The reality is that many very different scenarios could occur, and drawing rational conclusions in this fog of possibilities is extremely difficult without special methodologies for dealing with complexity and uncertainty.

Under these circumstances, settlement discussions between the insured and insurers typically deteriorate to lengthy posturing without any rational basis for compromise. Each side seeks to limit their risk without understanding exactly what their exposure is. Insured parties typically desire a percentage of coverage for whatever their exposure turns out to be, while insurers want a dollar buy-out to cap their exposure. And all this goes on without either party having a clear sense of how large the claims and resulting payouts might be.

Settlements, when reached, are based on pure guesswork, disgust for the cost and distraction of litigation, and on which party has somehow managed to gain an upper hand in the negotiations.

As an alternative, we present in this article a comprehensive approach for dealing with all of these issues. With this approach, the insured or insurers can build a solid understanding of their risk and exposure on which to base a rational negotiation strategy and settlement decisions. The result enables the parties to make sound business decisions that maximize shareholder value and stand up to scrutiny.

"Settlements, when reached, are based on pure guesswork, disgust for the cost and distraction of litigation, and on which party has somehow managed to gain an upper hand in the negotiations."

In the course of presenting this approach, we will discuss the types of problems this method is most useful for and illustrate it with figures drawn from an actual case (Numbers have been changed to protect confidentiality.)

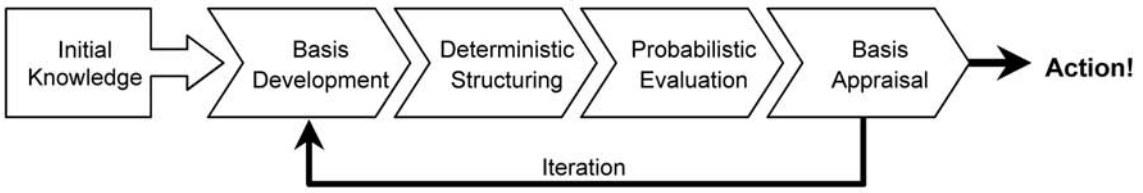
Overview of Approach

The objective of this process is to develop a clear understanding of how much the insurer or insured should be willing to settle for and why. This recommendation is developed by exploring what the prospects at trial would be, including any appeals if so desired. The idea is that a party should be willing to settle for an outcome at least as good as what could be obtained on average through litigation. Obviously, this approach into account the uncertainty in trial prospects and the cost of litigation as well the complexity and uncertainty in insurance coverage.

A systematic approach is required because the complexity and uncertainty created by these factors make it difficult (if not impossible) to intuit the best course of action. For simple decisions or decisions made many times already (such as setting the premium for a life insurance policy), these methods are usually not required. For novel, complex, and uncertain decisions (such as pricing insurance against terrorism), intuitive decisions are correct only by luck.

The approach employed is that of *decision analysis,* which was developed forty years ago out of statistical decision theory, systems analysis, and Bayesian probability theory. Decision analysis has been applied to hundreds of decisions over that time period, including many situations you have read about in the newspapers. This process is illustrated in Figure 1.

Figure 1. The Decision Analysis Cycle



The first step involves collecting all the available information relevant to the problem. In the case of insurance litigation, this would include data on all the policies in each layer each year.

In "Basis Development," you then develop a first cut at the pieces needed to start logical analysis. This may include additional factual information, and will include an initial set of alternatives to examine as well as the uncertainties bearing on how a given alternative will turn out.

In "Deterministic Structuring," you construct a model (typically on a PC using Excel) to capture the relationships between the alternatives, the factual information, and the uncertainties and to translate them into dollar impacts. The model will usually end with a cash flow statement.

For insurance coverage problems, a database is required to analyze the policy years, policies, and layers of coverage in each year. "Probabilistic Analysis" then yields a profile (in the form of a probability distribution) of the exposure to a particular party.

Lastly, an overall "Basis Appraisal" examines whether the issues raised in the course of the analysis have been adequately identified and a convincing profile of the insurer or insured's exposure generated which can form a basis for negotiation or trial strategy.

We shall illustrate each step of this process with examples drawn from an actual insurance coverage case. We will follow with a brief discussion of how this methodology can and has been applied to other complex and uncertain problems: specifically, to product liability.

Example: Complex Insurance Coverage Litigation

The problem illustrated in this case arose out of a situation in which liability for a company arose

long after the acts or omissions in question had occurred. The long latency for the problem raised many different and complex legal issues. Which events triggered insurance coverage? What is an occurrence? How should damages be assessed? Given the answers to those questions, how should liability be allocated among the many different policies and layers of policies in force in any given policy year? And what was the resulting overall exposure for each insurer, and the residual exposure of the insured?

Answering these questions required considerable analysis, following the approach outlined above.

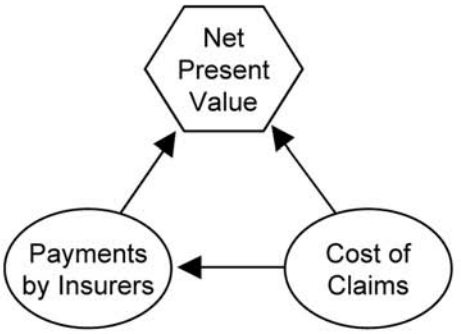
Basis Development

Basis development requires assembling a first cut at the alternatives, information, and values for the problem. For insurance litigation, we'll assume the alternatives are to continue to litigate or to settle the case.[1] Values are likely to be how much the whole dispute will cost the party in the end (insured or insurer), and a discount rate to calculate the net present values.

Care must also be taken to identify the information required to determine the eventual financial impact, both factual information and uncertainties. One tool found very useful in this quest is the *influence diagram.* An influence diagram is a simple, graphical representation of all the relevant factors and how they relate to each other. Uncertain factors are shown in ovals; certain ones in double ovals, decisions in squares, and the value at issue (such as net present value) in a hexagon. (The choice of shapes is purely a convention.)

For example, a very simple influence diagram for insurance coverage litigation is shown in Figure 2.

Figure 2. Simple Influence Diagram



This influence diagram shows that if you knew what the total costs of the claims were and how much insurers paid, you would know what the total cost to the insured party would be. It also shows that any payments by the insurers depend on what the total cost of claims is.

Unfortunately, this diagram is too simple to be of much use. It doesn't say anything about how you arrive at the cost of the claims, the time profile of those costs, or which policies in which layers of coverage by which insurers yield payments. Getting at those questions requires several further levels of detail.

Because people generally find influence diagrams easy to understand and work with, they are a good problem structuring tool to use—regardless of whether folks have any prior training in decision analysis.

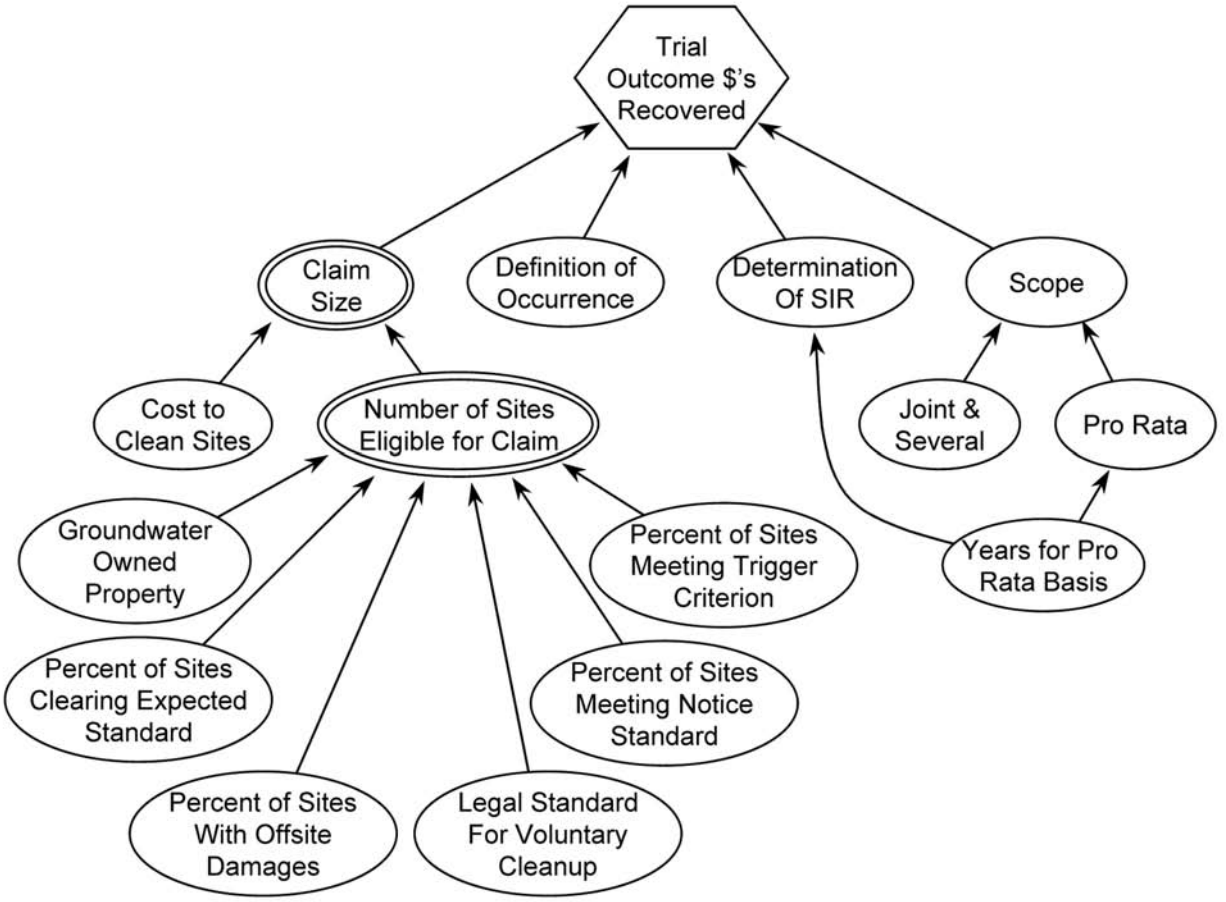
As you go through this process, you build up a structure for the problem and a set of quantities you will need information on. Each oval in the influence diagram will be either: (a) an input number; (b) an assessment of an uncertainty, possibly depending on other ovals pointing to it; or (c) a calculation using the ovals pointing to it as inputs. In this fashion, then, you develop the logical structure for how to go about modeling the problem.

For insurance coverage litigation, we often choose to focus on the dollars recovered at the conclusion of trial (and exhaustion of appeals) as an overall measure, rather than a generic "net present value." This allows us to develop a picture of what the ultimate prospects are if the matter proceeds to final judgment. It also forms a basis for negotiation strategy because if you can negotiate a deal which is better than what you would expect from proceeding to judgment, taking into account expected litigation costs, you've come out ahead of the game.

For example, Figure 3 shows an influence diagram from an actual case in which insurance coverage was

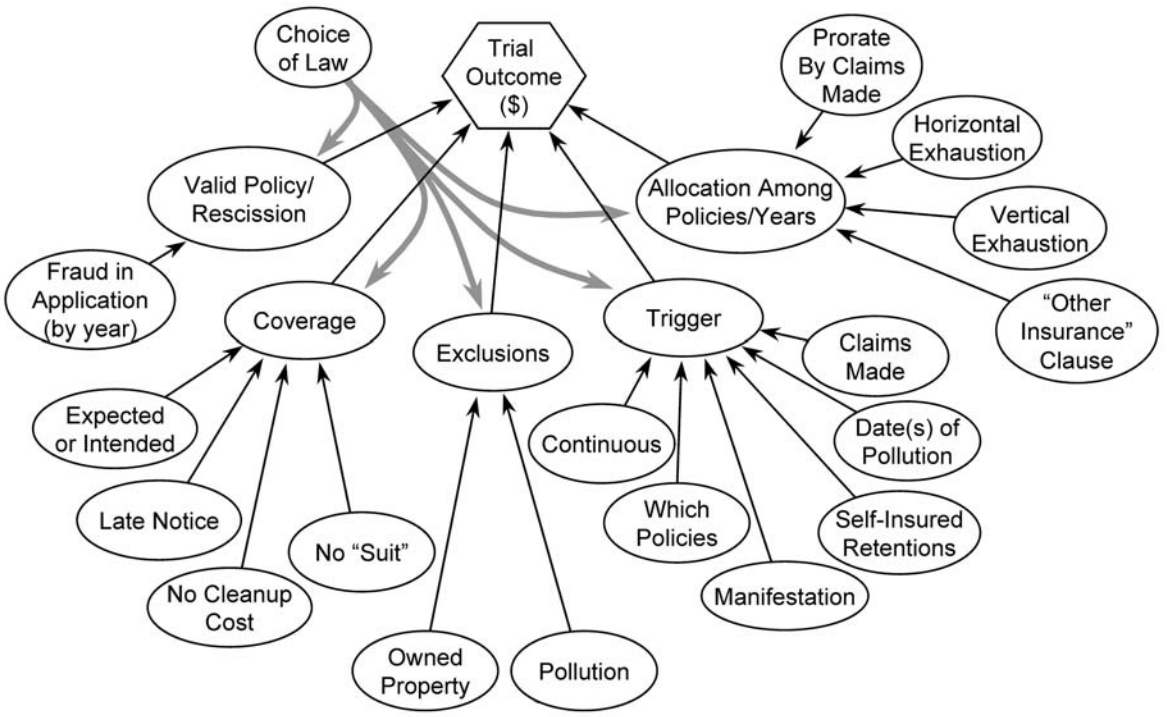
in litigation and the claims arose from cleanup costs for a number of industrial sites.

Figure 3. Influence Diagram Focused on Claim Size



This particular influence diagram focused on determining the amount of the claims. Figure 4 shows another influence diagram for a different insurance coverage litigation, which was more focused on the coverage issues.

Figure 4. Influence Diagram Focused on Coverage Issues



Other information required as part of the basis development was all of the information on the potentially applicable policies and layers, including:

- Definitions of layers
- Carrier
- Group
- Signature group
- Policy number
- Layer
- Amount
- Occurrence limit
- Trigger for coverage
- Starting and ending dates
- Whether coverage is for just indemnity or that and defense
- Whether coverage exhaustion applies just to indemnity or to that and defense
- Whether or not punitive damages are excluded
- Whether the carrier is fully or partially insolvent and, if partially insolvent, what percent of the policy amount may still be recoverable

The trigger for coverage oval addresses this issue of which events are finally chosen by the court to trigger coverage under a particular policy. In this case, there were three different potential coverage triggers:

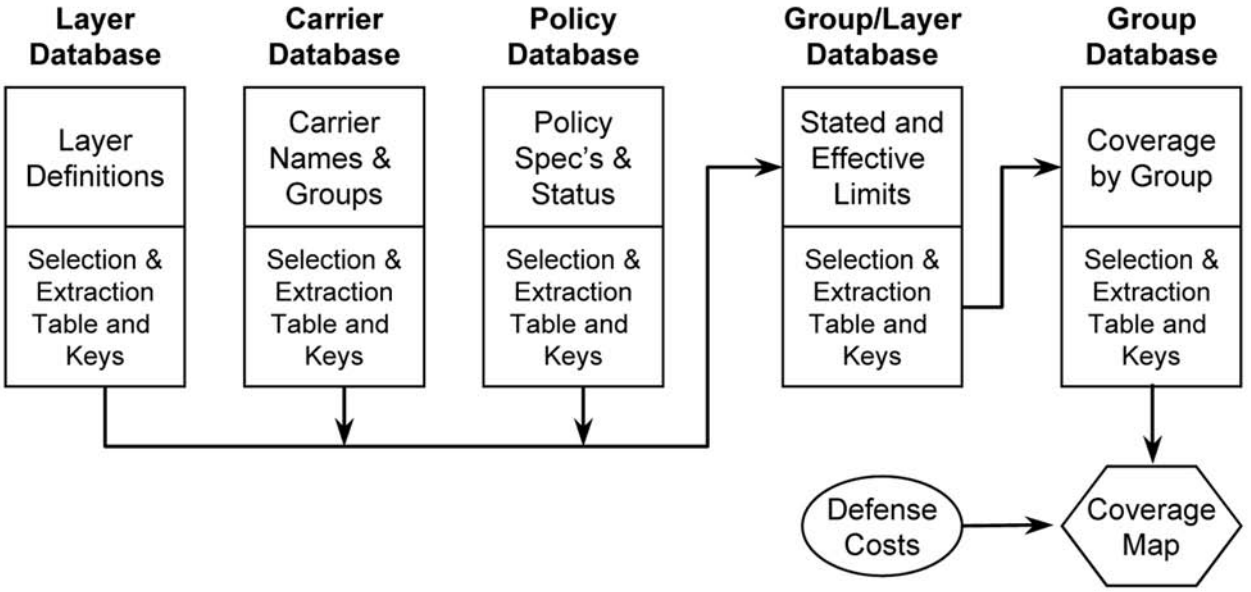
1. Continuous Trigger: insured is covered under all policies in effect while the damages were occurring.
2. Discreet Trigger A: policies implicated were those in effect when damage commenced.
3. Discreet Trigger B: policies implicated were those in effect when the items causing the damage were sold.

With all of this information assembled as the basis for the analysis, we are ready for deterministic structuring.

Deterministic Structuring

For insurance coverage, the first step is construction (or population) of the policy database required to produce the coverage map and payments by carriers for various scenarios. Figure 5 illustrates the components of the insurance policy database.

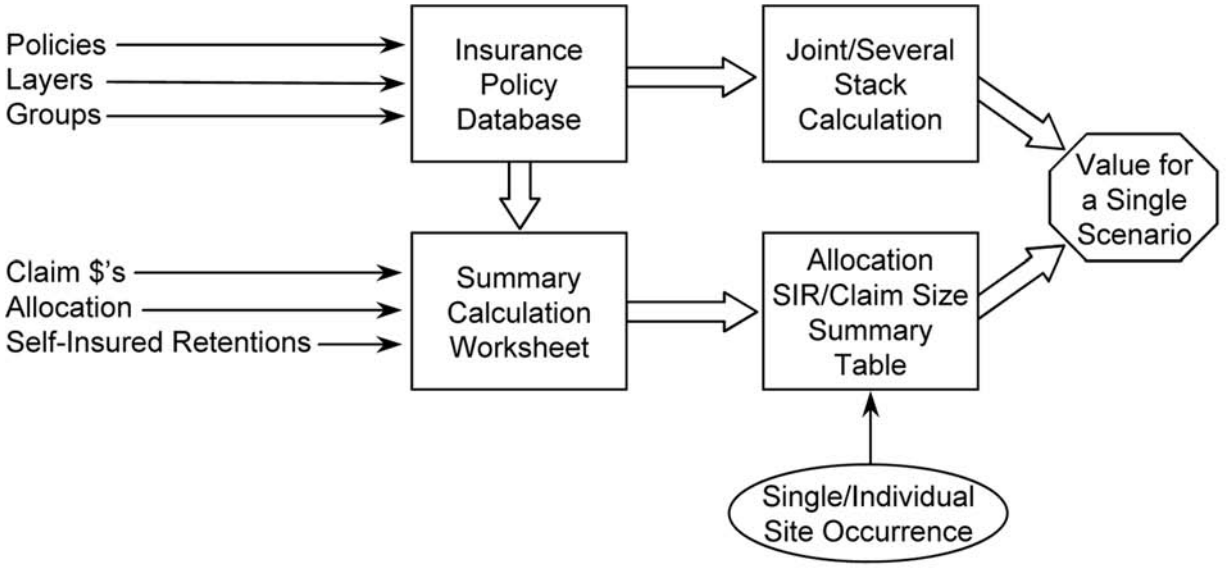
Figure 5. Insurance Policy Database



Because this database is programmed parametrically, quantities such as defense costs and the degree to which a particular carrier or group is insolvent can be handled probabilistically to produce accurate coverage maps for various scenarios.

In very complex cases, as in insurance coverage litigation, the modeling must be done in several different pieces to arrive at a final answer for a given scenario. Figure 6 shows the structure of the calculations programmed after developing the influence diagram shown in Figure 3.

Figure 6. Deterministic Structure for Insurance Coverage



Note that claims cost can likewise be treated as uncertain, as well as the method of allocating claims

payments amongst the various potentially responsible parties.

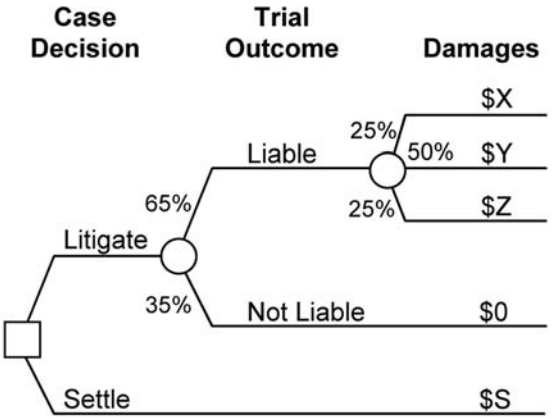
Once the models have been programmed to determine the exposures of the insurers and insured in a particular scenario, the next step is to generate probability distributions of the exposure for each party. Because the number of scenarios can quickly become intractable[2] —even on the fastest computers—sensitivity analysis will usually be required to determine which variables should be treated probabilistically and which left at their mean value.

Probabilistic Evaluation

In probabilistic evaluation, decision trees are used to calculate what the exposure is in various scenarios and the overall exposure.

The decision tree takes the key variables and puts them into a logical structure going from left to right to create the specific scenarios for analysis. For example, if you have a decision on accepting a settlement offer or litigating, uncertainty on winning or losing, and uncertainty on damages if you lose, five scenarios result, as shown in Figure 7.

Figure 7. Simple Decision Tree



Ignoring legal fees for simplicity only, the value of settling is the settlement offer of $S. The cost of litigating is described by the *expected value* of litigating, which is the probability-weighted sum of all potential scenarios. The expected value (EV) for litigating this case is

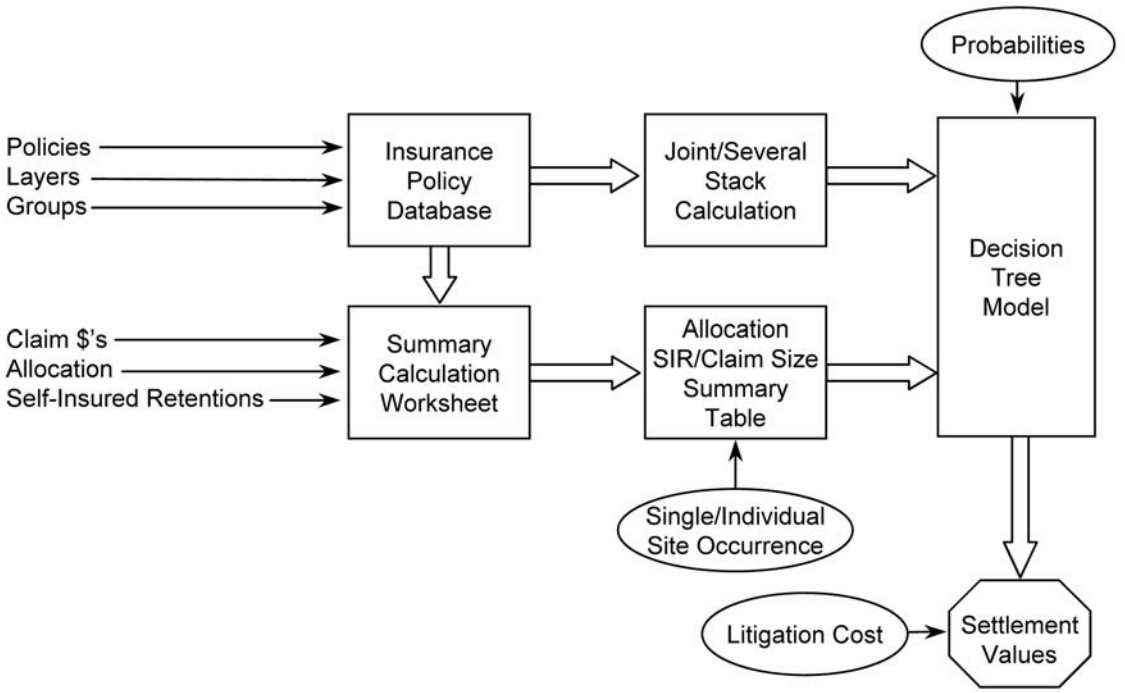
EV litigate = (.35 x 0) + {.65 x [(.25 x X) + (.50 x Y) + (.25 x Z)]}

Consequently, if you're the defendant (*and* ignoring attitude toward risk!), you should be willing to pay up to the expected value of litigating to settle the case. And probably still pay to settle the case if you can do so for only a "little" more than the expected value of litigating. Otherwise, take it to trial.

Likewise, a plaintiff should be willing to accept a settlement offer if it's *more* than the expected value of litigating.

Extending this kind analysis to complex cases takes more work and is considerably more complex, but allows you to generate the same kinds of insights and recommendations about a case. Figure 8 shows the logic for the model used for probabilistic evaluation in the coverage litigation example.

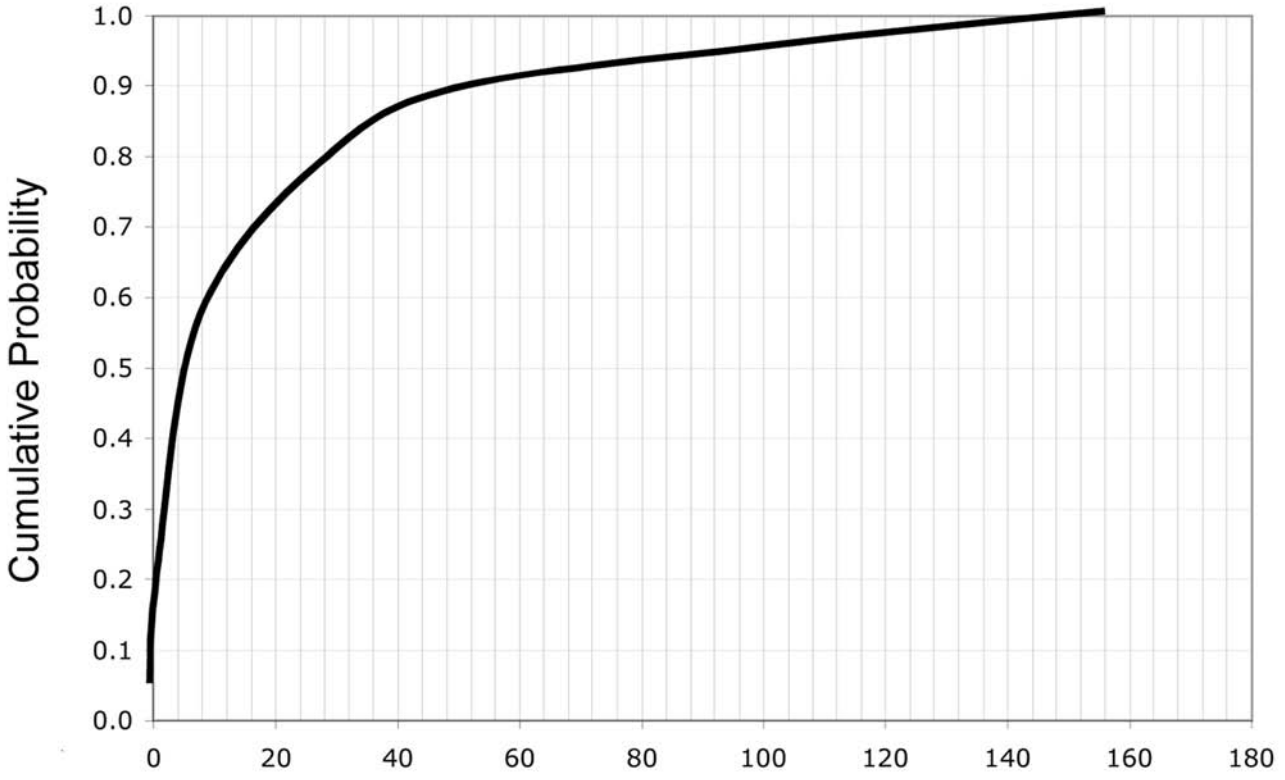
Figure 8. Logic for Probabilistic Evaluation



The insurance policy database and spreadsheet model developed in deterministic structuring are also used to generate scenario values in the decision tree. Bayesian probabilities are needed for all uncertainties, and the litigation cost must be considered. It is also usually a good idea to treat the cost of litigation as an uncertainty, especially in cases where litigation may be attorney or expert-intensive.

Some of the results we are most interested in are the average size of potential claims (recalling that typically many claims will be at issue, or many consolidated into a class action case), and what the resulting "covered" damages are. For a similar case, Figure 9 shows the cumulative probability distribution on average claim size.

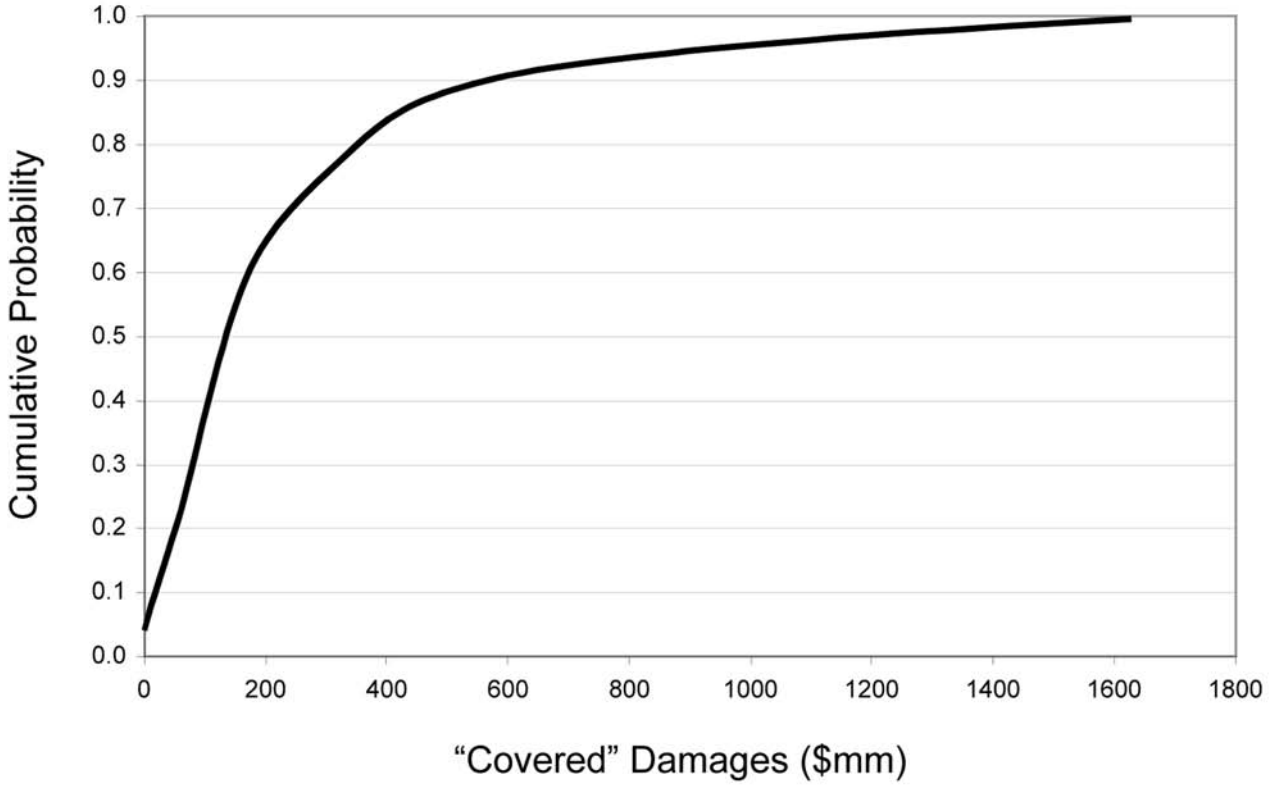
Figure 9. Cumulative Probability Distribution Average Claim Size



The cumulative probability distribution is obtained by integrating (summing the area underneath) the probability density function . For example, the familiar "bell curve" is a probability density function. The cumulative probability distribution is easier to work with because the odds of particular scenarios can be read directly from it. For example in Figure 11, there is a 10% chance (y-axis) that average claim size will be very close to zero (x-axis). Likewise. There is a 10% chance (1 minus .90 on y-axis) that average claim size will be greater than something around $60 million (x-axis). The mean (expected value) of this distribution is $30 million. The cumulative probability distribution gives a picture of the overall uncertainty, while the expected value summarizes it in a single number that can be used for decision-making purposes. These kinds of numbers are relatively easy to read off the cumulative curve, but almost impossible to read off a density function.

If we take the claim size in each scenario, multiply it by that number of claims in that scenario, and process the result through the insurance coverage database, the result is the "covered" damages for a particular scenario. Using probability associated with the "covered" damages in each scenario likewise yields a cumulative probability distribution on "covered" damages, as shown in Figure 10.

Figure 10. Cumulative Probability Distribution on "Covered" Damages



We can likewise calculate a mean value for the "covered" damages, which in this case is $319 million. Thus, from an insured's perspective, something like $319 million recovered in total from all carriers would constitute a reasonable settlement with the insurers.

However, this result doesn't address the issue—from both the insured party and a particular insurer's perspective—of how much a particular insurer should pay to settle all coverage claims. Determining those issues requires examining coverage maps, and then some further analysis.

The coverage map shows the exposures of the various layers of coverage to particular expected claims exposure by policy year. For example, the coverage map in Figure 11 shows that, although there is considerable exposure in layers 4 and below, coverage in layer 5 would only be impacted in 1983 given the expected year-by-year claims profile. (Note that, in this case, we are comparing claims and coverage, rather than the "covered" claims shown above.)

This particular coverage map excludes expected defense costs, the possibility of insolvent carriers, and self-insured portions of coverage. A revised coverage map showing the impact of expected defense costs and the potential for exhaustion of coverage due to defense costs is shown in Figure 12.

Figure 11. Coverage Map for Stated Coverage versus Claims

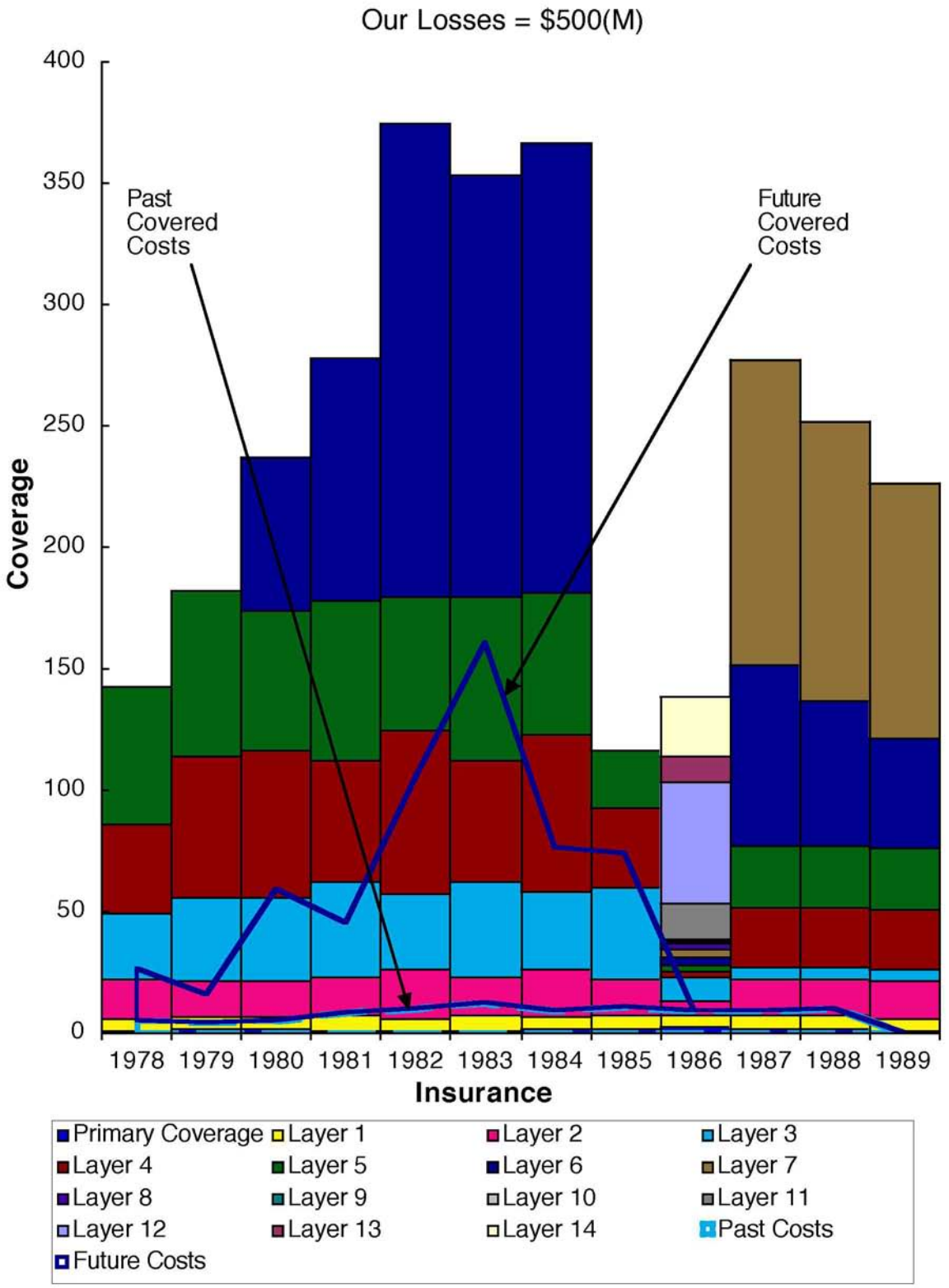
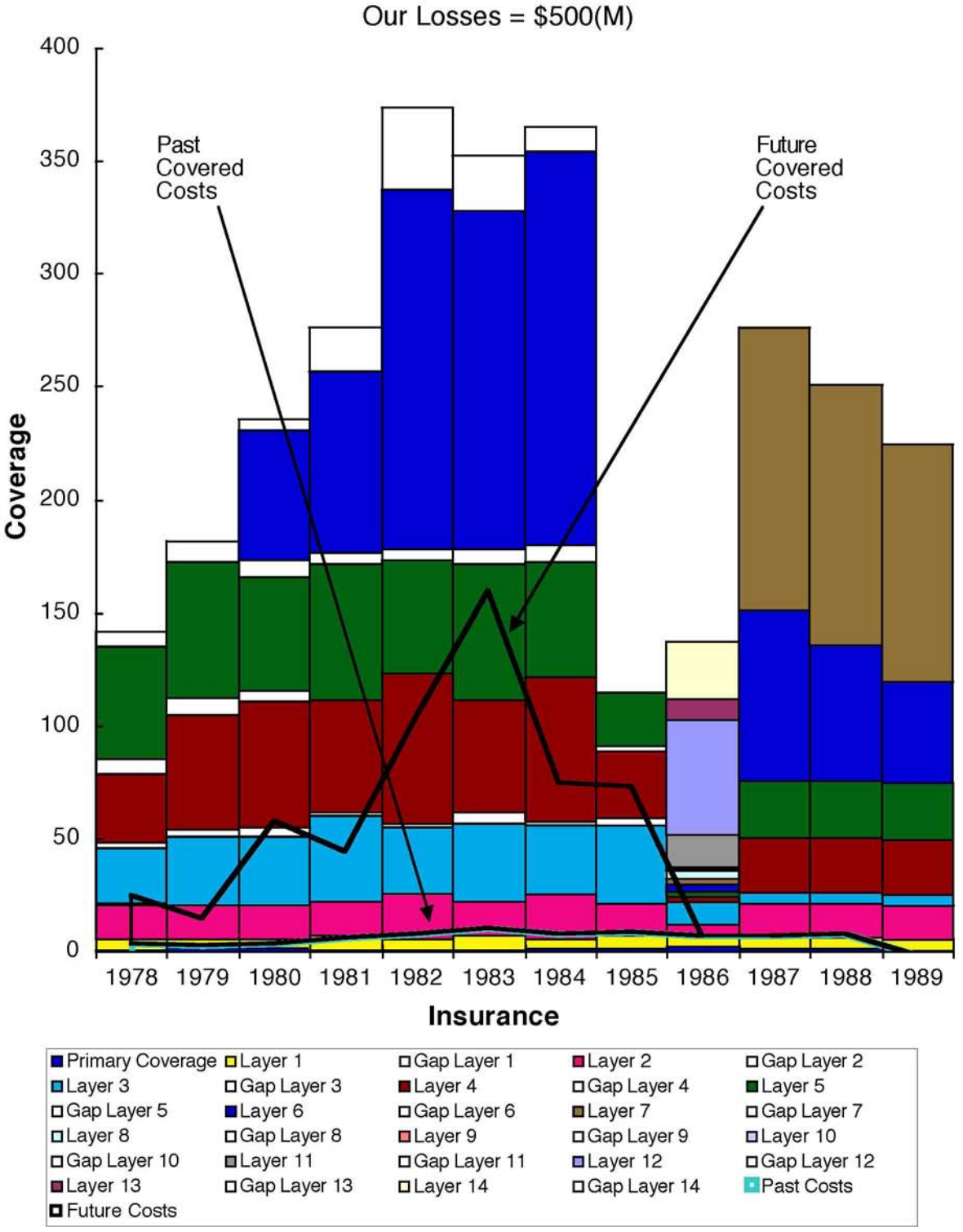


Figure 12. Coverage Map Including Expected Defense Costs



With the inclusion of expected defense costs, gaps appear in what otherwise looks like comprehensive coverage of the expected claims exposure. These gaps increase the potential costs to insured parties and decrease the potential payouts by insurers. The result for negotiation strategy is that insured parties should be willing to accept a smaller amount in settlement of the insurers' obligations than they

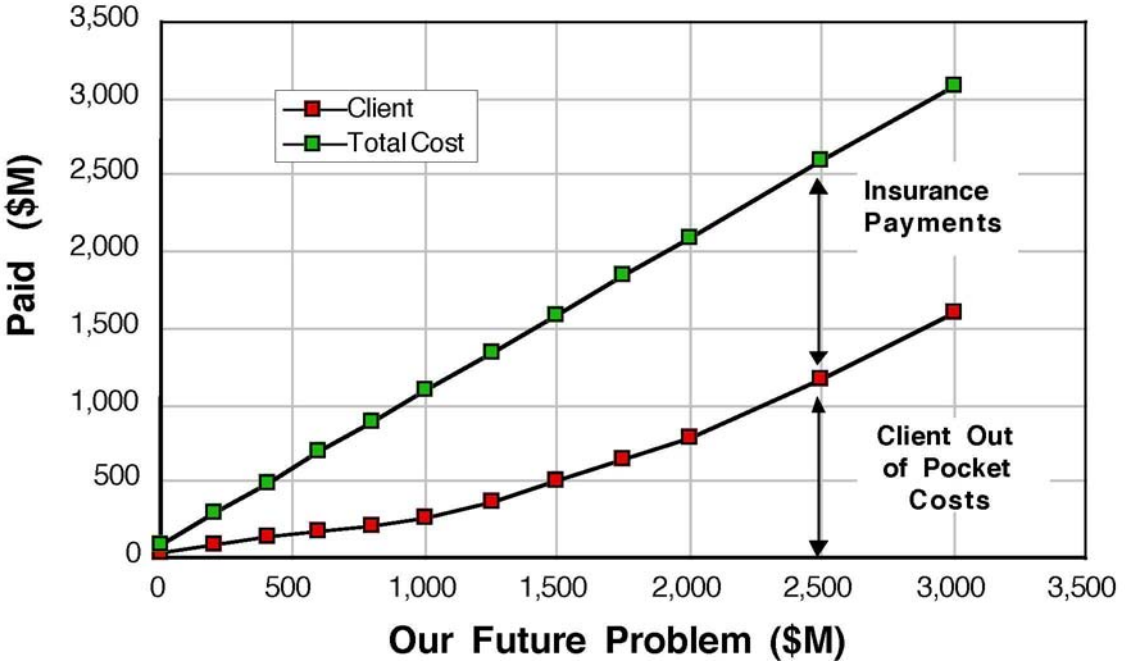
otherwise would, and insurers should lower the amounts offered in settlement. The database-generated coverage map—including defense costs—provides a unique and revealing year-by-year picture of coverage and gaps.

> ***"The database-generated coverage map - including defense costs - provides a unique and revealing year-by-year picture of coverage and gaps."***

A further coverage map including the effects of insolvent carriers and self-insurance would increase the size of the gaps and lower settlement amounts even further. On the other hand, factors increasing the amount of the claims—especially if further layers are thereby implicated—would tend to increase the amount the parties should be willing to settle for.

Given the claim size, the "covered" claims, and the out-of-pocket payments resulting from coverage gaps (whether from self-insurance, defense costs, or insolvency), we can show for varying claim sizes how much an insured party would expect to pay and how much it would expect to collect from insurers. These payments and collections are shown in Figure 13.

Figure 13. Insurance and Insured Payment of Claims



These results are a starting point for understanding the magnitude of the problem and the potentially applicable insurance coverage. Further analysis is required to identify the exposure of specific insurers. In addition to the issues of defense cost, insolvent carriers, and self-insurance, issues governing the allocation of liability among insurers must be examined to identify what a particular carrier group should offer in settlement of its liability, and what an insured party should be willing to accept in settlement of that carrier or group's coverage obligations.

Using the expected values for claims, covered damages, and the possible ways payments may be allocated among the insurers, we can determine what the expected payments are from all the insurers. Figure 16 shows these amounts aggregated by groups of insurers, with separate columns depending on how the court at trial would allocate liability among the insurers.

The summary by group shows the total for a particular group if the court allocates joint and several liability according to degree of responsibility, rather than holding each insurer fully jointly and severally liable to make up shortfalls from any insolvent insurers (and the totals don't exactly add up because of rounding with only one decimal place shown). For a particular insurer group, Figure 14 shows how much it should be willing to pay to settle its liability, and how much an insured party should

be willing to accept from a particular insurance group to settle coverage issues with that group.

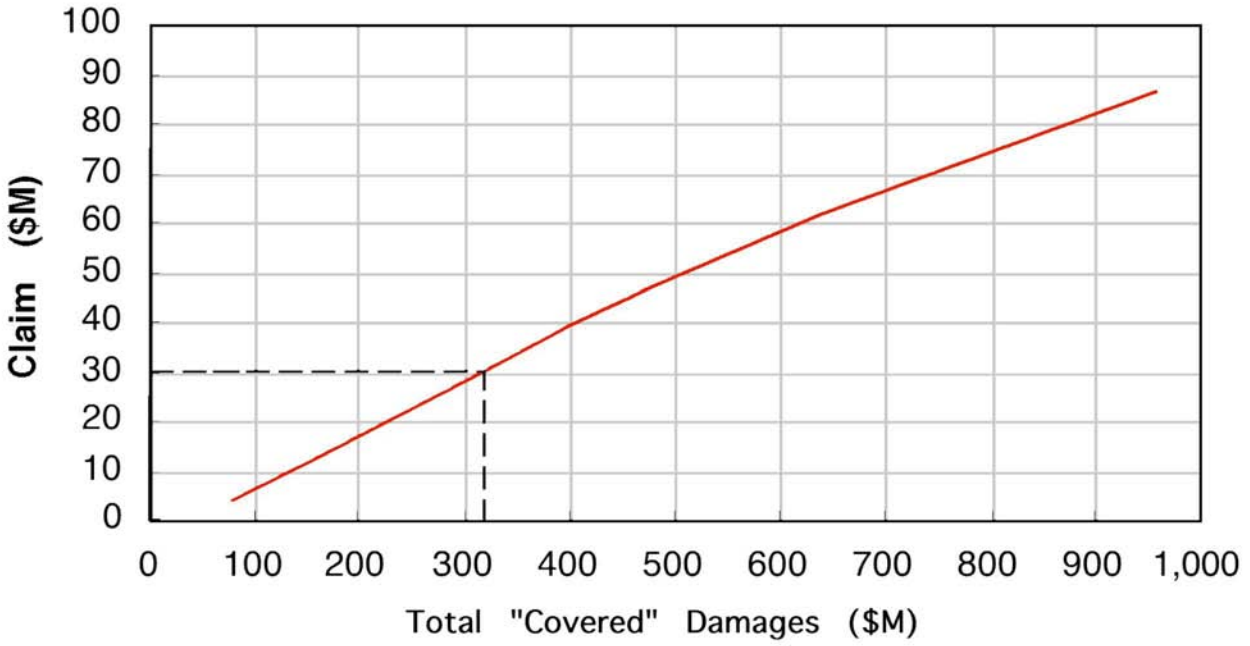
Figure 14. Expected Payments by Insurer Groups

Group	Expected Trial Outcome		
	Jt & Several to the Max	Jt & Several Allocated	By Group
All Groups	$36.3M	$32.7M	$32.7M
A	$17.5M	$6.5M	$10.7M
A-1	$1.2M	$0.M	
A-2	$9.9M	$4.3M	
B	$32.1M	$8.5M	$8.5M
C	$5.1M	$6.5M	$6.7M
C-1	$1.4M	$0.2M	
C-2	$0.9M	$0.M	
C-3	$2.7M	$0.M	
D	$16.1M	$3.2M	$3.2M
D-1	$0.5M	$0.M	
D-2	$1.3M	$0.M	
E	$18.M	$1.2M	$1.5M
E-1	$1.9M	$0.M	
E-2	$5.3M	$0.4M	
E-3	$6.6M	$0.M	
F	$2.M	$0.M	$2.M
F-1	$0.3M	$2.M	
G	$1.4M	$0.M	$0.M

In this manner, a coverage map and probabilistic analysis can enable clear, economic decision rationales and negotiating strategies for both insurers and insureds.

These results only show the expected value of payments by group if the coverage litigation were to proceed to final judgment. As with the "covered" claims and average claim size, insurers may want to know what the uncertainty is should they proceed to judgment. To illustrate this, Figure 15 shows "covered" damages versus claim size for the $319 expected "covered" damages shown in the cumulative probability distribution in Figure 10.

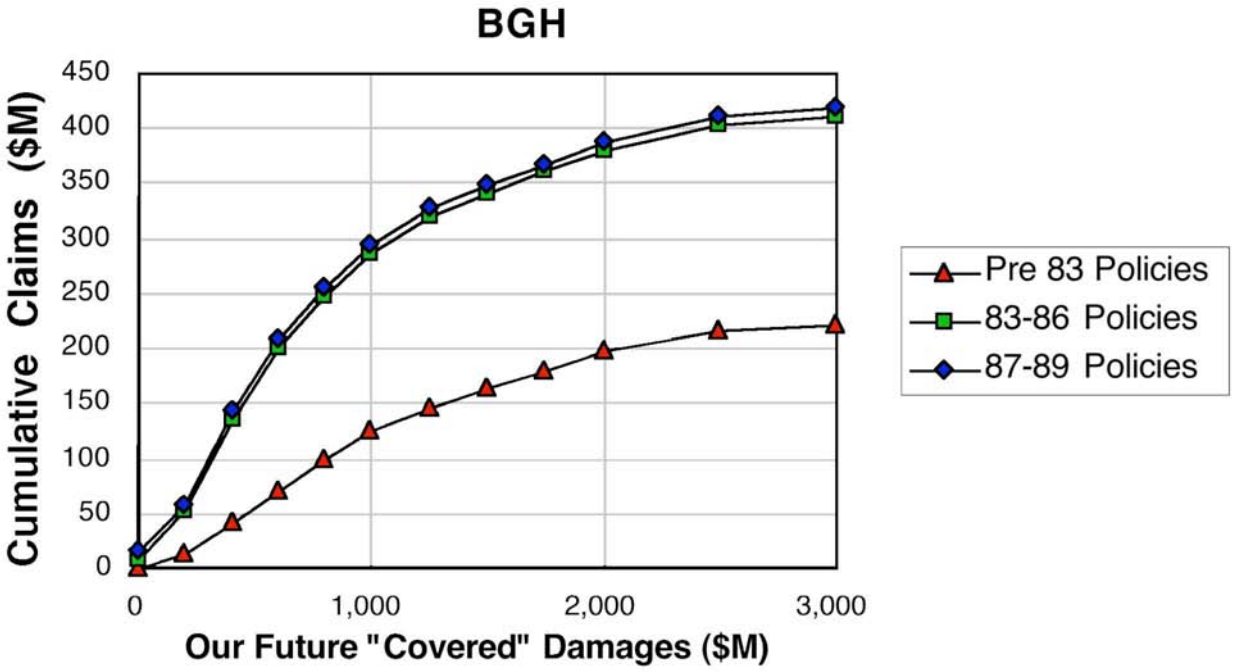
Figure 15. "Covered" Damages versus Claim Size for a Particular Insurer



To produce this result, we need to assume a particular coverage trigger and claim profile. As with all the results, when showing the uncertainty in particular quantities (claim size and "covered" damages in this case), we use the expected value case for the other variables held constant.

We can also show the cumulative claims against a particular insurer versus the total, "covered" future damages, as shown in Figure 16.

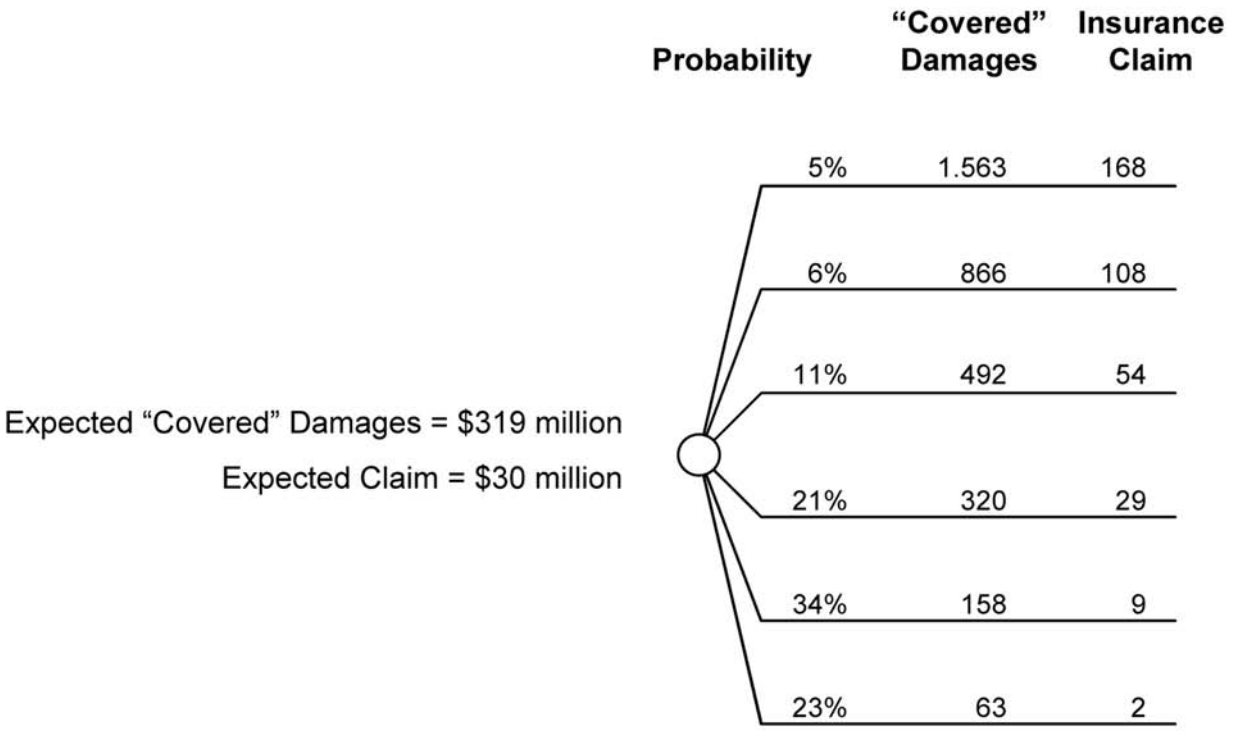
Figure 16. Cumulative Claims versus "Covered" Damages for a Particular Insurer



Although these kinds of diagrams are useful for showing the overall exposure to a particular insurer, the question may be asked: "Great. What do I do with this?" Or, more specifically, how do these results translate to settlement strategy and loss reserve decisions? For these purposes, a simple decision tree is often easier to work with.

Figure 17 shows the exposure for a particular carrier in decision tree form. It breaks the continuous probability distributions shown above into a number of discreet scenarios, including the probability of being in that scenario, the "covered" damages in it, and what the insurance claim would be for a particular insurance carrier.

Figure 17. Decision Tree for a Particular Insurance Carrier



Although the "covered" damages could be as much as $1.6 billion, there is only a 5% chance of "covered" damages being in this range. The corresponding expected value of insurance claims against a particular carrier group made in that range of "covered" damages is $168 million. Similarly, there is a 23% chance that "covered" damages could be in the range of $63 million, with expected claims made in that scenario of $6 million. Given this range of uncertainty, on an expected value basis, the carrier should be willing to settle for (and the insured party should be willing to accept) a settlement of around $30million. This is likewise the loss reserve the carrier should book.

For the sake of illustration in this article, a fairly extensive set of results from probabilistic evaluation has been presented. Had we been in the course of an actual analysis, we would have paused after the initial set of results for basis appraisal.

Basis Appraisal

In "Basis Appraisal," the key questions are whether the results are credible, whether they make sense, and whether they create a convincing case for what the best course of action is. In the case of insurance coverage litigation, the results should reveal how much the insured party should expect to recover from each carrier, and, from an insurer's perspective, how much the insurer should be willing to pay to settle their liability under the policies in question.

Usually, the problems with reaching this level of confidence are clearly evident. Do the results make sense to you? Can you trace through how you arrived at a particular result to be able to explain it? The first level of review should be whether you (the person performing the analysis) can justify and explain the conclusions.

Usually, three or four iterations will bring you to a sufficient level of confidence that further work on problem analysis doesn't yield a lot of benefit in terms of improving the alternatives or the outcomes. You'll be left with the key uncertainties driving the problem, and improving the situation requires doing something about *them.* What can you do to get a better handle on the potential damages? Should you consider commissioning expert studies to develop better information? What are the key trial rulings, which could go for or against you? Should you

instruct outside counsel to study these issues and render an opinion? How might the allocation of liability among insurers be in your favor or not? Is it worth trying to coordinate defense strategy with the other insurers, or, if the insured party, is it potentially as good or better to settle with the insurers individually or as a group?

When you are left with these kinds of questions regarding external factors not under your control rather than issues within the analysis, the results and conclusions are ready to be presented to the right executive audience for a decision and action. If you've done your job correctly, that meeting will focus on what the exposure to a particular party is, and on how to drive settlement negotiations to achieving a result at least as good as what the expected outcome is from following all litigation to conclusion.

Conclusion

Although insurance coverage litigation can seem intractably complex and uncertain, careful and systematic application of the tools and methods of decision analysis can reveal economic and prudent settlement strategies for both insurers and insured parties. The result is a sound, principled, and defensible basis for negotiation that can facilitate an expedited settlement between the parties. The further benefits of reduced time and expense devoted to ongoing litigation reduce costs and thereby increase shareholder or policyholder value.

> ***"These methods can and have been applied in many areas. In fact, the cases underlying the claims in this example were product liability."***

In other areas where many claims, large claims, or complex insurance coverage are issues (such as product liability, environmental litigation, asbestos litigation), decision analysis methods can also be applied to enable sound, economic decisions, produce clear management direction, and support it with convincing rationales. These methods can and have been applied in many areas. In fact, the cases underlying the claims in this example were product liability.

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1 Although we gloss over the alternative generation process here, developing creative and promising alternatives is often of critical importance. For example, in one patent litigation suit the authors worked on, the alternative being pursued is purchasing a portion of the defendant's business as part of an overall settlement. Decision analysis has a number of tools and methods for developing comprehensive and creative alternatives, which breadth and scope considerations prevent us from presenting here.

2 For example, suppose there are fifty different inputs to the spreadsheet models (not an unusual situation), each represented by a low, mean, and high potential value. That would result in 3^{50} potential scenarios, 7×10^{23} in total. Even if the model could be recalculated 10 times per second, 2.3×10^{15} years would be required to calculate all the scenario values. This span is beyond the duration of most consulting projects.