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Corporate Risk

The case for optimizing your insurance



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At many companies, insurance coverage is the cumulative product of a series of ad hoc decisions made over the course of several years. Although each decision may have been rational at the time it was made, the aggregate coverage, when viewed as a portfolio, may no longer resemble a coherent or cost-effective program. Leading companies have taken note of this and have developed a strategy to remedy the discrepancy.

The increased focus on shareholder value creation and capital efficiency is causing many firms' senior management to reexamine such programs. Specifically, firms are beginning to evaluate an emerging discipline known as 'insurance optimization,' which takes into account an organization's cost of capital and overall appetite for risk in evaluating the economic efficiency of insurance purchases.

The value of this assessment has been demonstrated to be as much as 25-30% of the annual premiums that major corporations now spend on insurance, which is equal to tens of millions of dollars for large firms. Senior executives are now requiring risk managers to demonstrate that redundancy and gaps in coverage, cost/benefit comparisons regarding insurable risks, and choices between risk ceding and self-insurance are all being explicitly evaluated and optimized.

Bridge to Enterprise Risk Management and Risk Appetite

Leading corporations are migrating from the traditional, siloed view of insurable risk to an across-the-board approach that ties directly into enterprise risk management (ERM). This shift is causing traditional distinctions between insurable and non-insurable risk to become less important than those between on-strategy and off-strategy risks. One consequence of this development is that a decision to insure or to retain a particular risk must be addressed in the context of the company's overall appetite for risk, as well as in terms of the risk-return trade-off associated with that risk.

But what does risk appetite really mean at the enterprise level? Very generally, risk appetite refers to the variability in results that an organization and its senior executives are prepared to accept in pursuit of a stated strategy, coupled with an assessment of which risks are on-strategy and which are off-strategy. Determining risk appetite requires a review of quantitative elements (such as debt rating, target ratios, and cash flow at risk limits) and qualitative factors (such as stakeholder and management preferences), as well as an assessment of risk 'acceptability' given the stated objectives. Reconciling the risk appetite of the firm with the viewpoints of

internal and external stakeholders enhances decision making across the organization and provides a framework that defines for the organization what ‘too much’ or ‘too little’ risk really means.

Describing the key economic determinant of whether or not to retain or insure against a particular risk is fairly straightforward: is the cost of the capital needed to retain the risk higher than the cost of purchasing insurance? In other words, the decision hinges on which option ‘costs’ the least. Absent insurance cover, losses in excess of the expected loss would require capital as a cushion. Unless this capital earns at least as much as the company’s hurdle rate of return, it is not being put to its best use. The insurance purchasing decision boils down to a question of optimization of capital usage. The capital markets will supply capital at the company’s Weighted Average Cost of Capital (WACC), and the insurance markets will supply contingent capital for the insurance premium. The company should choose the cheapest option given its risk tolerance and alternative uses for the capital.

Rethinking policies as a program

It has been practical for most organizations to mitigate risks by transferring them to established insurers, but in many cases, that is no longer the optimal approach in today’s volatile and highly competitive markets. Currently, there are new ways to buy insurance more efficiently: by changing the type of insurance purchased negotiating more effectively with the providers, by tweaking the limits and attachment points of the policies, or via alternative risk transfer methods. There are also methods other than insurance to lessen the risks; firms are discovering ways of matching risk profiles to risk appetites in a more transparent and cost-effective fashion. To be sure, doing so for a program that covers a number of different kinds of risk with various deductibles or self-insured retentions, limits, drop-downs and aggregates, not to mention multiple insurers and funding vehicles such as pool programs, mutuals, reciprocals and captives is a complex endeavor. Here are a few ways to put it in perspective:

- **How does insurance optimization help companies with large, diverse insurance programs and needs?**

The larger the insurance program, the more arduous it can be to sort through all the possible combinations of program structures without a defined methodology designed to rank each program structure against some common metrics. Managers can choose from many different retention and limit combinations. Insurance optimization utilizes a systematic methodology to identify programs in which every premium dollar is providing maximum value.

In Oliver Wyman’s client work to date, insurance optimization

has generated significant cost savings – 30%-plus reductions in annual costs in some cases – by identifying retentions and limits in programs that were not cost-effective in transferring risk and recommending more efficient alternatives.

■ **How might insurance optimization help organizations that have historically opted to retain large risks?**

To answer this question, two more must be posed. First, is the cost of retaining the risk being properly reflected? Second, from a risk appetite standpoint, are stakeholders expecting the organization to retain capital to cover the potential risks associated with these insurable events?

These questions have to be answered in the context of the company's overall risk appetite. Insurance optimization identifies how much capital the organization is placing at risk and estimates the cost of this capital, which is effectively a risk-retention charge. As the amount of insurance and the risk profile change over time, this charge will also change. The goal is to optimize the value of the company's capital; essentially, if the insurer's price, based on its risk-adjusted return for providing coverage, shows up as a lower cost than the company would incur by self-insuring, then the risk should be ceded. If not, the risk should be retained.

■ **How does insurance optimization help companies whose business philosophy has been to buy as much insurance as they can?**

This approach presumes that it is cheaper to use an insurance company's capital to finance risk than it is to use the organization's own capital. Insurance optimization determines whether or not this assumption is true. Should the assumption prove false, the optimization approach provides a detailed, quantified way to recommend where and why retaining additional risk is a more efficient use of the organization's capital.

CASE STUDIES

The following examples demonstrate how companies can determine which program provides the greatest value for the retained risk. Such an approach ensures that an organization's risk transfer strategy meets its requirements while avoiding over- or under-allocating scarce capital resources.

Situation:

- Organization seeking to optimize \$200 MM in insurance purchases

Solution:

- Built integrated risk model
- Centralized analysis of all insurance contracts
- Measured economic effectiveness of current program
- Defined optimal risk retention-transfer frontier

Impact:

- Identified changes to insurance program that saved \$20 MM per year in premiums while keeping risk exposure constant

Situation:

- Organization has 30 lines of coverage with only qualitative understanding of liability risks

Solution:

- Built integrated risk model
- Modeled fault lines and calculate exceedance probability curves
- Estimated impact of various proportional and non-proportional insurance structures as well as CAT bonds
- Compared alternative insurance programs to optimize the risk-return profile

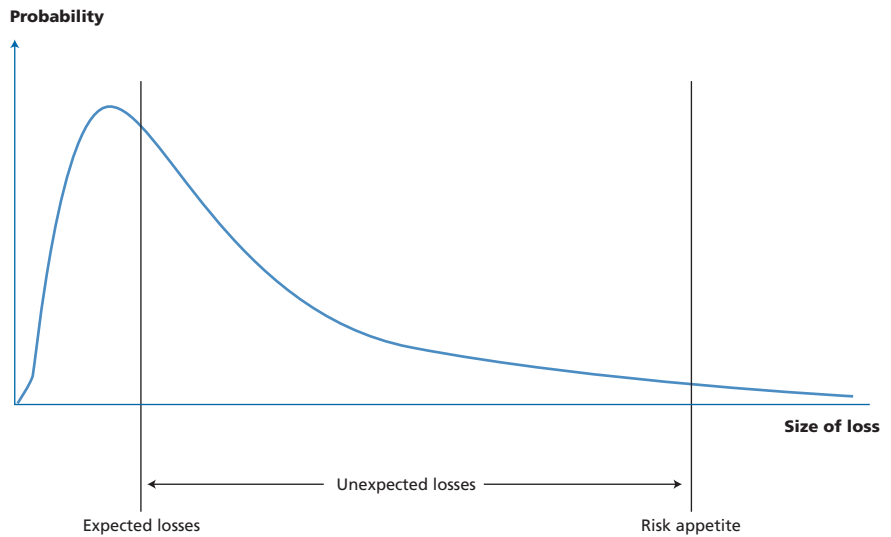
Impact:

- Identified insurance programs that 1) increased the return on the insurance program by 30% for the same level of risk, or 2) decreased the risk by 23% for the same level or return

Expected value is not enough

Without insurance coverage, the company would undoubtedly have to accept increased costs of doing business. In order to evaluate the economic efficacy of insurance, it is necessary to extend the analysis beyond the mere trade-off between the cost of the premium and the average or expected loss transferred (Figure 1). Similarly, looking at a stratification of the losses ranked by various deductibles does not provide a detailed enough picture of the potential volatility of (the unexpected) losses that the organization may experience, especially for programs in which there are multiple deductibles over the various lines of coverage.

Figure 1: Unexpected losses should generate a capital charge



Source: Oliver Wyman Analysis

Expected value calculations are useful in the case of frequent, low-severity losses. However, if potential losses are large but infrequent, an expected value analysis will break down because the premium will often significantly exceed the expected value of the risk transferred. Furthermore, expected value does not adequately capture the effect of losses that exceed the limit of the insurance program. If such losses occur, they will flow through the organization's income statement. Clearly, the greater the volatility of the risks retained, the more capital that is effectively at risk. To alleviate this problem, a charge for the capital now at risk must be included. Only when we factor in how insurance alters the capital cost do we begin to see how much value insurance really provides.

Evaluating when insurance creates value

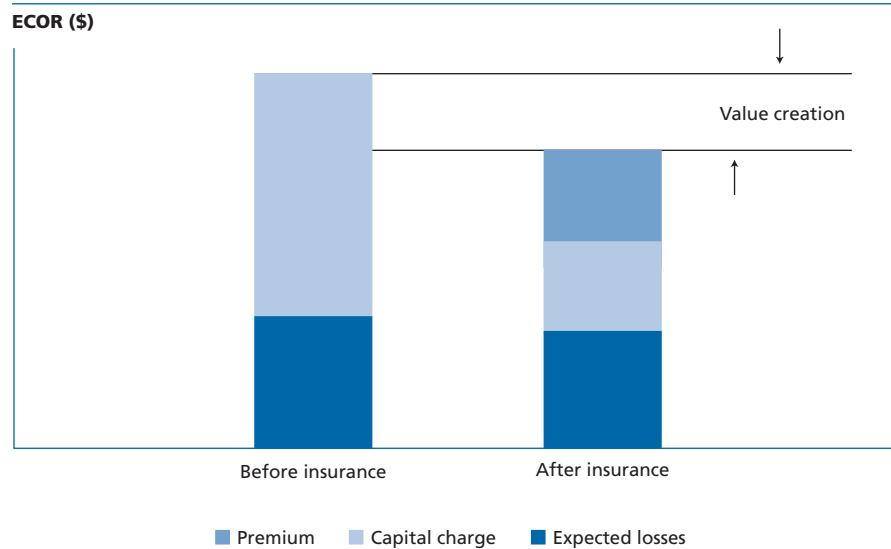
We calculate the economic value of insurance by determining the risk-adjusted return (RAR), that is, the difference between economic cost of risk (ECOR) before and after insurance. A positive RAR number indicates that value is being created by the purchase of insurance; a negative number indicates value destruction.

ECOR is an estimate of the total cost of risk that results from a particular program structure. It is the sum of three components: insurance premiums, expected discounted retained losses, and the capital charges required to cover unexpected retained risk. If the ECOR is lower with insurance coverage than without coverage, then, as indicated in Figure 2, the insurance is economically justified.

However, it is important to note that even though that specific combination of insurance policies is economically superior to having no insurance, it does not necessarily represent an optimal solution.

The inclusion of a capital charge puts a value on the capital that is held for unexpected retained losses and corresponds to the organization's cost of finance. This capital cost is generally small for frequent risks of low or moderate severity (auto liability, etc.), but it can be a significant sum for programs with high retentions that are subject to low-frequency/high-severity events such as property, business interruption, or third-party liability.

Figure 2: Economic value of insurance



Source: Oliver Wyman Analysis

Determining an optimal insurance program

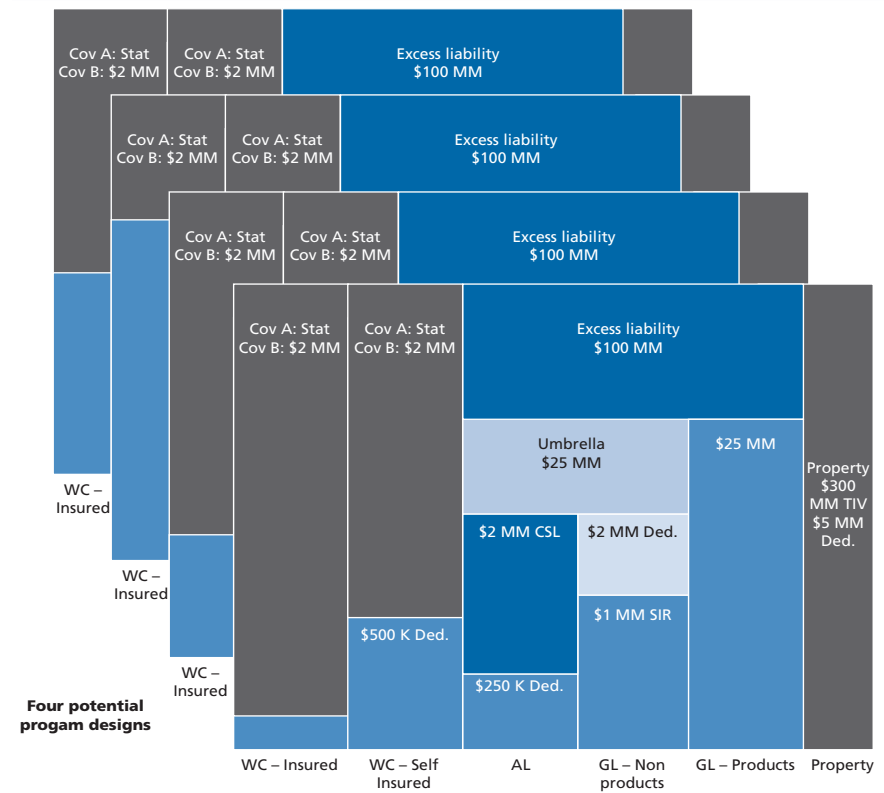
There are five steps to designing an optimal insurance program:

1. Deconstruct the current program and develop a list of possible program structures for review
2. Build an integrated loss model
3. Access the market's sources to develop premiums for each coverage in each program structure
4. Develop the 'efficient frontier' for alternative program structures
5. Go to market

Deconstruct the current program and develop a list of possible program structures for review

To arrive at the best solution, the current risk management program must be broken down into its component parts—each needing to be fully delineated and understood in terms of individual claim retentions, aggregate retention, and policy limits—along with the attachment point of umbrella programs and limits of those programs. The program is then reconstructed by examining a number of alternative structures that work within and across an organization’s various divisions and departments, and that are consistent with the company’s risk appetite.

Figure 3: A multi-line insurance structure has many options



Source: Oliver Wyman Analysis

Build an integrated loss model

Next, an integrated loss model that simulates gross claims (including correlation impacts) for all the risks the organization wishes to cover with its insurance program must be constructed. It is important that the risk model is integrated because the organization does not face risks from each potential occurrence individually; rather, all the risks threaten the organization continuously. A piecemeal analysis could lead to a suboptimal result. In many cases, historical loss

data can be used to develop a loss distribution. In other cases, data may be scarce and other information sources should be tapped. For example, sophisticated parameter estimation techniques can be used to calculate a range of loss distribution parameters from the firm's existing insurance programs or the programs of peer companies. Expert opinion can also be used to guide the final selection of parameters.

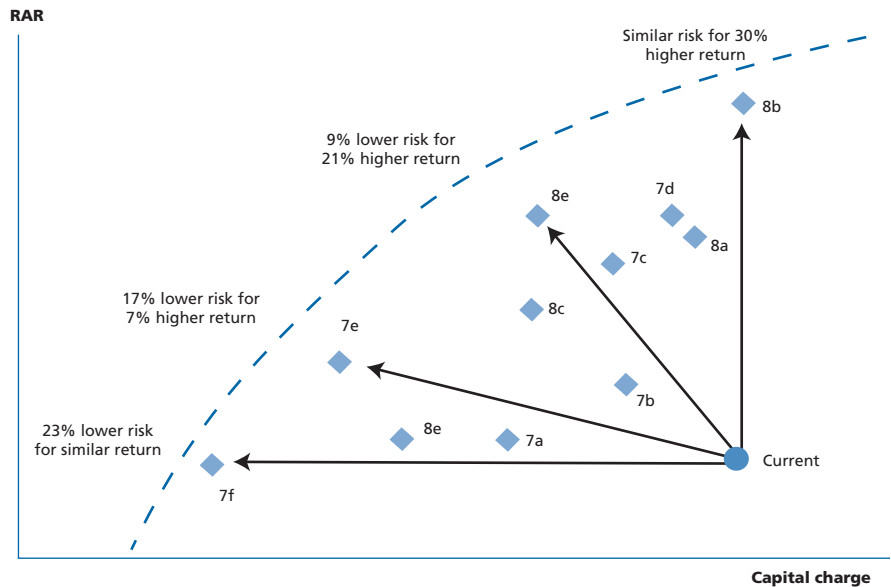
Access the market's sources to develop premiums for each coverage in each program structure

The premium for each of the potential program structures must be determined, but it is important that this is done without giving away the market information. This information could encourage some managers to skew the results away from the best program and toward one that is easier to realize. At this stage, the availability of the program structures being considered needs to be validated and any program that can not reasonably be placed should be eliminated.

Develop the efficient frontier for the program structures

The ECOR and RAR numbers for each program structure under consideration are then calculated using the loss model. Once the structures have been modeled, each alternative program's ECOR is plotted against its RAR. This yields a clear picture of the risk-return payoff for each alternative relative to the others. Figure 4 shows where we can develop an efficient frontier. Programs that have higher RAR and lower ECOR form a boundary or frontier, as shown by the dotted line. Programs below the frontier provide a sub-optimal RAR for the given amount of ECOR.

Figure 4: The program structures' efficient frontier



Source: Oliver Wyman Analysis

Go to market

To select which insurance program structure to take to market, we must define an amount of capital to place at risk to cover the retained losses. As noted above, the decision should be consistent with the organization's risk appetite. Proceeding in this fashion will provide the company with the information necessary to better understand which coverages it wants, thus allowing it to negotiate the best deal possible in the marketplace.

How optimal is your insurance program?

Insurance coverage is no longer a secondary issue for chief financial officers. When margins are thinner, competition is greater, and volatility is endemic, it is essential for risk managers to consider carefully their approaches to insurance. Past efforts have perhaps mitigated the risks of factory fires or lawsuits, but for most companies, those efforts have not been coordinated and examined against the backdrop of the organization's cost of capital and alternative uses for that same capital. Individual decisions related to limits, deductibles, and other components of the insurance program are not yielding the kinds of possible benefits that CFOs will soon be demanding.

The advent of insurance optimization techniques provides an analytical approach to re-evaluate the insurance portfolios in context of capital costs and the true value for an organization.

Four foundation questions to ask

A better insurance program begins with the answers to the following critical questions:

1. Are your organization's insurance purchasing decisions driven simply by historical buying patterns or by what the insurance market is offering you?
2. Are the retentions and limits of your insurance program consistent with your organization's risk appetite and your ERM framework, or are they just legacy numbers that are rolled forward year after year?
3. Is the insurance coverage you purchase consistent with the needs of your organization today, or is it a reflection of past needs and circumstances?
4. How is the cost of capital factored into the selection of your organization's retention levels?

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