

DYNAMIC RISK MANAGEMENT FUTURE PERSPECTIVES.

*By Dr. Robert J. Gibbons, Ph.D. CPCU, CLU**

Overuse threatens the term "risk management." Once the precise description of a sophisticated intellectual discipline, the term now pervades common parlance. Financial institutions have risk managers to help them avoid unpleasant surprises resulting from changing interest rates or currency exchange rates. Advertisers urge consumers to practice risk management by purchasing their product rather than a competitor's more dubious goods. Even insurance practitioners promise risk management, but deliver something less. Real risk management offers great potential for minimizing the consequences of accidental losses, but it must be applied rigorously and consistently.

For real risk management to prevail in securing a safer world for the twenty-first century, a clear conceptual framework is essential. Advanced industrial economies have accumulated significant experience in risk management,

but its application need not be limited by outmoded concepts. Better to rethink, revise and reformulate the objective of the discipline before extending it to new frontiers.

Traditional Concepts of Risk

Risk management originated as an analytical method for optimizing insurance coverage. By changing the perspective from insurer to insured, risk managers could prioritize insurance coverages according to their analysis of loss exposures facing the insured. This methodology also provided benchmarks for alternatives to insur-

* Formerly Vice President of the American Institute for CPCU and the Insurance Institute of America, Dr. Robert Gibbons now serves as Technical Adviser to the Insurance Institutes of the Caribbean. He is also on our Editorial Board.

ance, making it possible to evaluate the cost-effectiveness of safety programs and loss control devices. Risk management is a structured decision process consisting of "the logical sequence of identifying and analyzing loss exposures, examining alternative techniques for dealing with those exposures, selecting the most promising technique(s), implementing the chosen technique(s), and monitoring the results to see if, in fact, the loss exposure has been dealt with most cost-effectively" (Head and Horn, p.2). By following those steps, an organization can systematically reduce its cost of risk over time.

Changing the perspective to that of the insured was a paradigm shift for insurance and safety professionals. This paradigm shift required risk managers to be clear about their discipline. Rooted in insurance, it was natural for them to distinguish *pure* from *speculative* risks and to insist that they dealt only with pure risks.

Pure Risk

According to this dichotomy, pure risks relate to the potential for accidental losses. Thus they present no possibility for gain, only for loss or no loss. According to the conventional view, "the risk manager's basic job is to assure the financial solvency of the

firm against the consequences of pure risk at the lowest possible cost" (Rosenbloom, p.5).

Speculative Risk

Risks that present an opportunity for gain as well as loss are considered entrepreneurial or speculative risks. Although originally put forth by economists, much of the theoretical rigidity on this distinction stems from the need to convince the public that insurance is not gambling.

The distinction, however, precedes late-nineteenth century moralism. It is ingrained in the commercial practice that evolved over many centuries. Contracts for transferring risk evolved to specific needs and were refined by experience. Different needs pointed toward different mechanisms and encouraged specialists to focus on particular types of risk with which they were comfortable.

In the fourth century B.C., for example, Athenian merchants differentiated risks of the sea from risks of the land and developed different solutions for each. The ancient Greeks commonly described life in terms of opposite extremes, and in a civilization crowded along a craggy coastline, the dichotomy of land and sea was inescapable. Trans-

porting goods involved a choice between only two possibilities, land or sea. Business activity itself focused either on the land or the sea. Each involved extensions of credit to cover the inherent risks, but different methods were used to calculate the yield or price of that credit (Cohen, pp.44-60)

The risk of the land was related mostly to the size of the harvest, whereas the risk of the sea usually was a question of a ship safely arriving at its intended destination. Since the ship could be either lost or not lost, this risk of the sea was akin to the modern concept of pure risk. The risks of the land, however, were more speculative in nature. Specialists in assuming those risks expected a modest yield in return for the use of their assets for a period of time, an expectation which evolved into the tradition of banking. The risks of the sea involved greater costs, better handled by techniques for sharing losses which involved fixed costs regardless of the time involved. These marine loans supported shipping throughout the Mediterranean, and by the fourteenth century evolved into more sophisticated contracts of insurance.

Thus the separate worlds of banking and insurance, and the distinctions they make in the course of performing their familiar roles, have an ancient

heritage. Much of the scientific progress of the Western world reflects the application of Aristotelian methods of rational classification and organization of knowledge. Specialists can become expert in particular fields because limiting their domain enables them to concentrate their efforts on a narrow range of problems. A methodology built on dichotomies of black or white, land or sea, lost or not lost, however, does not allow for the endless variety of possibilities between the opposite extremes. The problem of risk in the twenty-first century will require a re-evaluation of the concept of risk untainted by the ingrained business practices of the twentieth century and the tradition of dividing everything into antithetical categories.

The distinction between pure and speculative risk blurs the many intermediate possibilities that are becoming increasingly important in the practice of risk management. It is an oversimplification that has outlived its usefulness. Twenty years ago, Orio Giarini called this picture "far too simplified; risk is more and more complex and it is less and less obvious or even legitimate to distinguish between an entrepreneurial and a pure or insurable risk" (Giarini, 1977, p. 24). Kalin Tuan and William P. Davis called the failure of risk managers to incorporate financial considerations "risk management

myopia" (Tuan and Davis, p. 9). Despite these warnings, risk managers seldom analyze the real dimensions of risk.

The Real Dimensions of Risk

Much of the difficulty arises from the nature of risk itself. Risk is, by and large, unknown, or at least unforeseen and therefore undefinable. Defining or describing something is the first step toward controlling it. The real difficulty for risk managers is the residual, that which exists but cannot be defined. No listing of the various categories of risk can ever be complete. A divide-and-conquer approach to risk management is doomed to failure; real risk management must be holistic.

The risk inherent in each situation is unique. It stems from multiple sources in varying degrees. Those variations occur along two dimensions, —condition and timing. Rather than categorizing risks, they should be measured according to these two dimensions so they can be properly evaluated.

Condition

The value of any asset or claim on resources can be affected by a change in condition. The value of a building, for example, varies according to extent

of damage inflicted by the ravages of time. Thus the owner of the building assumes a risk that the value of the building may be less than he expects because of an unanticipated deterioration of its condition. Risks of this sort are also called underwriting risks because they are the sort typically assumed in insurance contracts.

Timing

The same asset or claim on resources also has a different value at different times, which is influenced by general economic conditions. The terms of trade between present and future uses of an asset fluctuate. In an environment with a stable long-term outlook, investing for the future may be attractive, but an uncertain future can induce one to convert his assets to cash at a lower price than anticipated at the time he desires to sell it because of changing economic conditions. This risk is unrelated to the intrinsic value of the asset; it relates only to the relative values of various types of asset within the particular macroeconomic environment.

Risks can be measured according to the magnitude they represent along each of these dimensions. The magnitude of the total risk is the com-

bination of both of these influences. In mathematical terms,

$$\text{Risk} = f(c,t)$$

where c is the variance in condition and t is the variance in timing.

Traditionally the dominant dimension for a particular risk determined its appropriate treatment. The risks of the sea involved only slight timing risks, but significant condition risks. For the risks of the land, the timing risks were more important than the condition risks. Insurers dealt with one; bankers with the other.

In the modern world, however, all risks contain both elements. Bankers accept default or credit risk, which is a matter of condition, in every loan they make. Insurers accept timing risks by writing policies providing replacement cost coverage, by insuring obligations for a stream of future payments, as in liability or workers compensation insurance, or by issuing life insurance and annuities. Modern financial instruments, including reinsurance contracts, can be drafted to transfer any combination of timing risk and underwriting risk that the parties desire.

Analytical Methods

Since real risk management must deal

with the total risk facing the entity, its analytical method must allow for this holistic concept. All intellectual disciplines rely on certain methods of analysis developed to make useful generalizations. Any method chosen places limits on reality for the sake of simplifying the analysis. A fundamental limitation in traditional risk management is its reliance on static rather than dynamic analysis.

Static Analysis

Risk management depends mostly on the method of comparative statics so useful in microeconomics. Static analysis works well for common exposures to loss. Either the accident occurs, or it does not occur. As long as the focus is restricted to pure risk, the method works. It compares different states of nature at a given point in time, measuring corresponding values under each state. Static analysis, however, is unidimensional. It does not allow simultaneous consideration of the timing and condition dimensions of risk.

Dynamic Analysis

Dynamic analysis views outcomes over the course of time. Whereas static analysis necessarily excludes one of the fundamental dimensions of risk, dynamic analysis incorporates both

the timing and condition dimensions. Dynamic analysis assesses the performance of a risk management program relative to all the competing uses of the same resources over a particular time frame. The risk manager's true success comes not just from protecting the firm's assets from fires and natural disasters, but from preserving and enhancing the firm's continued ability to compete in its desired market.

Once again the point is not new. Writing in 1977, Tuan and Davis stated the objective of risk management as "to maintain as completely intact as possible the cycles of circular flow of funds in business or service organizations" (Tuan and Davis, p. 10). Unanticipated deterioration of the firm's assets undermines their earning power. Disruption of earning power limits the organization's ability to add productive assets. The real risk manager is continuously engaged throughout this cycle in minimizing risk and thus optimizing the returns to the organization.

Real risk management, therefore, must be dynamic. It must take a holistic view of the risks facing the enterprise, measuring them according to both the timing and condition dimensions. Only then is it possible to project the

impact under various scenarios and to analyze the significance for the entity's future competitive position. The performance of risk managers in the twenty-first century will be judged relative to one another, much as the performance of investment managers is judged now. At that point risk will be evaluated by the market rather than by obsolete systems of classification, and real risk management will have arrived.

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"Five minutes! Zounds! I have been five minutes too late all my life-time."
— Hannah Cowley.



"I never think of the future. It comes soon enough." — Albert Einstein.



"Lo! Men have become the tools of their tools." — Henry Thoreau.

