



SOCIETY OF ACTUARIES

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European market cont'd

In the light of this activity, what have been the most popular countries for new ventures? The graph shows the relative premiums per head of population throughout the EC countries in 1987 (the latest year available) and, for comparison, the same figure for the United States. These figures indicate that life insurance has yet to make its mark in Southern European countries. Interestingly, recent years have seen substantial growth in life insurance business within these countries, which indicates the vast gulf between south and north in this respect only a short while ago.

This relative lack of penetration within the Mediterranean countries has prompted many people to seek to establish or to acquire companies there. However, the current cost of acquisitions is high, and the quality of the remaining targets is not necessarily in accordance with the prices demanded. It also is important to note the relative level of social security within each country and the relative attractions of alternative means of saving, short or long term. Markets where life insurance is subject to strict control may not offer the best prospects for new entrants seeking to do something different.

So where do the market opportunities lie? Undoubtedly, many EC markets are open to new entrants. Such entrants may succeed if they bring with them new product ideas, marketing skills, sales training, and information technology knowledge.

Perhaps the long-term impact of 1992 will be to produce two types of life insurance companies. The first would be the large multinational with establishments of some form in most if not all EC countries selling products locally and across borders where appropriate. The other type would be the small niche player providing a specialist product, possibly using a specialist distribution network in a relatively small area. The companies likely to fail are medium-sized national insurers, too large to consider themselves niche players but too small to expand into Europe. The management of such companies may seek to protect themselves by acquisition, merger or offering their companies for sale. The competitive restructuring continues to escalate.

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The cost of environmental risks

by Margaret Wilkinson Tiller

Environmental issues are often in the news these days. Issues range from what should be cleaned up, to which clean-up method is appropriate, to who will bear the clean-up cost. Actuaries should be aware of environmental issues, how these issues influence actuaries' financial estimates, and how actuaries can help make informed decisions on environmental issues.

The exposure

Environmental risks are everywhere. Humans are part of the ecological community and are constantly interacting with it by our very presence. Every decision we make (or refuse to make) affects the environment. Even a seemingly innocuous decision to buy a book affects how much paper a paper mill produces, which in turn may cause additional air and water problems.

For this article, all environmental risks are assigned to one of three categories: occupation, local environment, and substance abuse.

Occupational environmental risks are job-related. They can range from "sick office syndrome" for office workers, to chemical exposure in manufacturing plants, to air pollution exposure for road maintenance workers.

Environmental risks associated with the local environment surround us where we live. This category includes exposure to hazardous waste dumps, air pollution from local plants, and radioactive fallout from a nuclear accident.

In the third category of substance abuse, the primary example is cigarette smoking, which affects not only smokers but those around the smoker.

The first step in any environmental risk assessment is to determine what the exposures are for the particular situation. This is usually done by an environmental risk consultant who draws on engineering and risk-management expertise.

An exposure analysis determines to the extent possible the following:

- what can be harmed,
- any conditions or situations that can cause or increase the chance of harm (hazards), and

- any active causes of loss (perils).

Consider the situation of an underground tank containing a petroleum product. One thing subject to harm is the water table under the tank (the what). The age and physical condition of the tank are factors that affect the chance of a loss (hazards). The active causes of loss include a tank leak (peril).

The second step in an environmental risk assessment is to determine to the extent possible whether any potential problems have already occurred. For both potential and current problems, the alternatives are explored, and the "best" solution(s) selected.

The cost

To help determine which alternatives are most reasonable, cost estimates should be considered. In addition to dollar costs, there are other parameters that are difficult to estimate on a dollar scale, such as the quality of life.

Occupation — The direct cost of occupational exposures is often handled through workers compensation insurance. Occupational exposures also can be handled by other means, such as office retrofitting.

Workers compensation costs are part of the employer's cost of doing business. As such, they are passed on to consumers of the employer's products or services. Occupational exposures also may indirectly affect other types of insurance, such as life insurance. If lifespans are shortened because of occupational exposure, life insurance claims may be paid out sooner than anticipated.

Local environment — Most big environmental risk news stories center around local environmental risks. Chemical wastes in particular can be a great health hazard, are costly to clean up, and can result in large liability costs and indirect costs. Indirect costs include decreased housing values, increased use of medical insurance, and reduction in lifespan.

Current regulatory mechanisms, such as Superfund, are probably inadequate to meet the costs of abandoned hazardous waste sites. Addi-

Environmental cont'd

tional funding must come from a broadened tax base, private industry, insurers, or other sources.

Insurers often are reluctant to provide clean-up and liability coverage because of broad court interpretation of insurance contracts. Any costs borne by insurance companies are passed to insurance purchasers, who in turn pass costs to consumers. Consumers also bear the cost of any increase in direct clean-up costs or taxes paid by private industry. Consumers can be tapped more directly by "user" fees and taxes that go directly into clean-up funds. As an example of the last item, an additional tax on gasoline could go toward the clean-up of underground petroleum tanks.

Another method of broadening the tax base is to increase the general tax revenue. Who is impacted by this approach depends on the tax law at the time the increase is established.

Substance abuse — Smoking is one of the largest health hazards to the general population. This is particularly distressing considering that to smoke or not is each individual's decision. Smokers have higher health costs, die younger, and cause or exacerbate health problems in those around them. Also they spend money on cigarettes that could be spent in more productive ways, and they cause additional cleaning expenses for removal of smoke odors from such items as clothing and drapes.

Some of the smokers' additional costs are paid by the smokers. Others are borne by those surrounded by smokers. Many are paid through taxes that fund health insurance programs such as Medicaid. Abusers of substances other than tobacco have similar costs, many of which are not paid by the substance abuser.

Prevention and reduction

To date, most environmental risk activities have focused on the clean-up of current environmental problems. Many of these problems are immediate in nature. But to benefit long term, action should be taken to prevent these problems in the future and to reduce the impact of those that occur.

The ultimate prevention is avoidance. The best example of solving an environmental problem through avoidance would be for everyone to stop smoking. This might cause some short-term economic problems for

tobacco growers, manufacturers and distributors of tobacco products, and their employees. However, the long-term economic and health benefits of avoidance far outweigh the short-term economic problems.

Many environmental risks can be reduced. Often a problem chemical can be replaced with one that does not cause a problem, or the procedure utilizing it can be replaced with an entirely different, and safer, procedure.

For those environmental risks that can not be reduced, we might be able to mitigate the impact of problems that arise. For example, if there is no other option than to store a petroleum product in a tank, the tank could be placed above ground and monitored frequently to reduce the time between leak occurrence and discovery. Clean-up procedures can be improved and practiced so that discovery of a leak triggers immediate and effective action.

Summary

Properly managing environmental risks, rather than simply responding to crises and/or passively estimating costs, is important to our survival as a species and to our quality of life. Rather than simply estimate the financial implication, actuaries can be active in making informed choices. This requires that the following activities be performed:

- determine to the extent possible the full range of possible environmental risk problems,
- consider all realistic alternatives including prevention and reduction,
- estimate both the direct and indirect financial and nonfinancial impacts of each alternative,
- consider the expected cost and range of costs when looking at the financial impacts,
- consider who will ultimately pay the associated costs and the best way to accomplish this, and
- make an informed decision.

The results of the decision should be monitored to see if the decision is producing the expected results. If not, the decision may need to be altered to better meet humanity's long-term needs.

Margaret Wilkinson Tiller is President, Tiller Consulting Group, Inc. She was one of two actuaries who spoke at the Forecast 2000 Environmental Risk Forum in Toronto in July.

Captain Gerald Coffee says, 'Faith is the key to survival'

by Judith Bluder

With a recount of the seven years he spent as a prisoner of war (POW) in North Vietnam, Captain Gerald Coffee, a retired naval officer, delivered a message on faith at the Society's annual meeting October 22-25 in New York City.

His keynote presentation focused on the invincibility of the human spirit. Coffee told of how he learned to stay alive and sane in a situation that seemed hopeless. He described the seven years he spent jailed in a cell the size of a large closet with a concrete slab for a bed, and the beatings and mental fatigue he had to endure.

Although those years in Vietnam seemed futile, Coffee said he learned some valuable lessons the hard way. But now he is able to share those experiences and hopes to inspire people to believe in themselves, he said.

"It didn't take very long to figure out that probably the very key to my survival all those years in prison was going to serve me just as well as the key to survival right here at home on a daily basis for the rest of my life," Coffee said. "And the key was simply faith."

He said that without past experiences to draw upon, making decisions and living in a world so full of ambiguity and gray areas would be that much tougher. If his experience as a POW inspires others to have faith in themselves, their country and people in general, Coffee said he has accomplished his goal.

The faith that pulled him through the years of solitude, torture and mental anguish consists of four different aspects: faith in ourselves, in one another, in our country and in God.

In Vietnam, Coffee said he and the other POWs had to find "faith in ourselves to not just survive the experience, but to go beyond survival. To survive and return with honor."

The POWs, each locked in individual cells, communicated with tapping, coughing and sneezing.

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