

Risk Management for Life Insurance Companies in Today's Environment

By Eric Seah, Aviva Group

We live in a world in which changes abound, and risks are rife. Life insurance industry is not immune and has to deal with the risks and the changes. In fact, it is probably no exaggeration to make the following statement: the changes and challenges that life insurance companies face today and over the next few years would probably be more than what many of them have experienced over the last few decades.

This paper outlines the major trends and changes, and covers examples of the types of risks that life insurance companies are dealing with today. It is hoped that this paper will generate some further work and discussions on risk management of life insurance companies, particularly in the context of Asian markets.

This paper is based on a presentation to the insurance regulators in China, during a seminar jointly organized by China Insurance Regulatory Commission and Aviva Group. The seminar was held during September 2003.

Introduction

With all the changes and new trends that are emerging, managing the myriad of risks in today's environment has become a big challenge. And this is particularly so for the life insurance industry.

We only need to look around us, and we can begin to appreciate how these changes and trends have impacted the way we live, the way we work, and the way we play. All these obviously will have implications on the life insurance industry.

Among the many changes and trends, we can probably group them into the following important ones:

- Demographic changes (due to breaking up of traditional family units, smaller family size, higher divorce rates, single family and so on): needs of individuals and families are changing.
- Improvement in public hygiene, nutrition, continuing advances in medical science and technology: people living longer, and healthier; quality of life improves.
- Increase in longevity: demand for additional economic resources – geriatric care, healthcare, post-retirement needs, and so on.
- Increasing affluence and knowledge: as a result, changes in people's wants and desires, and in people's behavior.
- Globalization and convergence of financial industries: blurring of players in the financial industry, new opportunities, new products, new services for the people, with things like round-the-clock trading, one-stop shopping of financial products and services.
- Ever-changing computer, communication and other technologies: work, communication and entertainment have whole new meaning today, compared to the world we know of ten years ago.
- Financial engineering and new investment products: invention and creation brings with it potentially new and unforeseen risks.
- Terrorism: events such as September 11 and Bali bombing have changed the outlook and behavior of many people.
- New and killer illnesses: after AIDS, SARS is another example of what an unexpected and devastating illness can do to mankind. And what next?

Implications of the trends and changes

It is interesting to note that some of these trends and changes are happening at a faster and faster pace. One has to look no further than the innovation, new products and applications that are coming out in the field of the communication and computer technologies. It is truly amazing how these new developments are improving our lives and changing the way we do things.

But what are the implications of these trends and changes? How are they and will they be affecting us? How do they impact the management of life insurance companies? At a high level, some of the main implications can probably be categorized as follows:

- With the advances in technology, time and space are being compressed. This means we need to have quicker response and the reaction time span is shortened.
- New developments and changes, and the fact that changes are happening at a faster pace imply that things may become more unpredictable, and we are therefore likely to see increasing volatility in all areas of our lives and activities (not just limited to the investment performance).
- Increased knowledge and wealth, ready access of information, ease of flow of capital and funds globally will result in increased competition and hence the squeeze on profit margins.
- Living longer and getting wealthier point to the increased need for insurance and investment solutions.

All these will have profound impact on how life insurance companies are managed. In the remainder of this paper, we outline the various areas that life insurance companies would be looking at when it comes managing the risks that they are facing.

Risk reduction or avoidance

Do not put all the eggs in the same basket. This is probably a cliché. But in the context of life insurance, it can mean a number of things. For example, do not rely heavily on any one product for the premium growth. If things go bad unexpectedly, the impact can be huge.

From the life insurance point of view, risk reduction could involve looking for risks with negative correlations, so that on balance the overall risk is actually diminished. One commonly quoted example is the combining of life insurance benefit and annuity benefit to cancel out the mortality and longevity risks. Another example involves packaging the mortality and accelerating Critical Illness risks, rather than having the standalone Critical Illness risk on its own.

In terms of risk avoidance, an example is to avoid and manage the accumulation risk, which manifests itself when a group of people traveling on the same flight decides to take out accidental death insurance coverage for the flight.

Look beyond the average

There is a tendency to simply focus at the average, and forget about the volatility.

Life insurance companies should remind themselves at all time that it is volatility that can ruin them. When we talk about volatility, we usually think about variance, Value At Risk, skewness, tail of probability distribution, and so on. However, in many cases, volatility is elusive and is not easy to pin down, in which case we would need to resort to modeling and do some estimation.

In managing the pricing risks, margins should be included for potential adverse deviation or volatility. The higher the volatility, the higher the risk, hence the higher Provision for Adverse Deviation (PAD). In other words, we have to price appropriately for the risks.

Improving mortality rates

Mortality rates have continued to decrease in developed market, even though the rates of improvement are lower and appear to be slowing down. In developing markets, the declining trend remains strong. It should however be noted that there are counteracting forces that can retard or even reverse the improving trend. Examples include life style illness (such as AIDS), obesity, smoking etc.

Although improving mortality is a boon for life insurance business, it can present a big challenge for pension and annuity business, for two reasons. Firstly, we would need to project the mortality improvement many years into the future, so that we can get a proper assessment of the cost of annuity payments. Secondly, given the increasing population of retirees (thanks to longevity and improving mortality), pension and annuity business will be big business and the future growth engine for life insurance companies. The risk is thus magnified.

Critical Illness

Many life insurance companies guarantee the premium rates for Critical Illness coverage, and experience has been good.

But there are signs that things may not be as rosy as before. Experience in developed markets such as UK shows that the incidence rates for Critical Illness coverage have increased. The worsening trend in Critical Illness claims may partly be due to the waning of the positive impact that results from reduced smoking.

There is credible evidence that earlier detection of critical illness (due to advances in medical science and technology), heightened health awareness, and more frequent checkup have combined to drive up the claim frequency and cost.

Re-insurers have begun to stop guaranteeing the risk premium rates for Critical Illness coverage. In some cases, re-insurers may provide the guarantee for a much shorter duration (such as 5 years), at a cost. And life insurance companies are beginning to follow the re-insurers' leads and remove the guarantees on the rates to the customers.

Low interest rate

Since the late 80s and early 90s of the last century, interest rates have declined and stayed at low levels for prolonged periods of time in many parts of the world. In Asia, a good example is Japan where interest rates have languished at near-zero level for many years that people can remember.

While life insurance companies are able to reduce the impact of the low investment yield by cutting the bonus and dividend for participating policies, they can still face significant loss if the break-even interest rate (at no bonus or dividend) under pricing is higher than actual investment yield.

The bigger worry has to do with the non-participating policies, when a significant proportion of the assets have to be reinvested at investment yield much lower than the pricing interest rate.

Lack of investment products in new markets

A key challenge for new and developing markets is the lack of breadth and depth in the investment products, particularly in the area of bonds. This is also true for the relatively more developed insurance markets in Asia. For these markets, government bonds tend to be in short supply considering the demand for them. And similarly, rated corporate bonds are also under-developed.

Where bonds are available, their term tend to be shorter than the life insurance liabilities, making the asset liability matching difficult. In short, there is much catching up work to do in the development of capital markets, and there is a real and urgent need for the government and financial industry to develop them.

Volatile returns and recent poor performance in the stock markets have caused many life insurance companies to reduce their exposure in these markets. As a result, a significant proportion of assets are invested in cash and short-term money market papers, adding further pressure on the investment performance.

In managing these investment risks, the investment return assumption for pricing should therefore allow for some healthy margin. Unfortunately, due to the competition, investment returns higher than what can be realistically achieved are often used. These have resulted in major interest rate gap problem in some new markets, and can cause major chaos to the industry if not properly managed.

Competition

Competition is generally good and desirable, as it tends to result in efficiency and better value to the consumers. Unhealthy competition on the other hand will be detrimental to the healthy development and growth of the market.

When the market is opening up or when growth is slowing down due to maturity or some other reasons, we can get into a situation where there is too much capital going after the same consumer dollars. In some cases, the capital is used blindly to go after growth and market share. As a result, the market can be flooded with products of depressed profit margins, or worse still, with unprofitable products. In the longer term, the industry will suffer and lose out.

Life insurance companies would need to watch and avoid falling into the trap. For one thing, lower profit margins give life insurance companies less tolerance for the pricing errors and adverse volatility. In fact, life insurance companies should be prepared to exit and shun certain markets if the competition gets too hot and the products are simply unprofitable.

Guarantees and options

There are costs to every guarantee and option – however small. It is important therefore that life insurance companies value the cost of guarantee and option.

Options such as convertibility, renewability, and guaranteed insurability may look harmless. But if life insurance companies do not understand its potential impact and the cost involved, they can be in for a big surprise or shock.

Before life insurance companies offer any guarantee and option, the following should be noted:

- With very few exceptions, past experience tends not to be a good prediction of the future -- particularly when there is not much data. So the life insurance companies need to be vigilant about the potential adverse impact in the future.
- As far as guaranteed premium rates go, so far it appears to be working for long-term life insurance products (due to improving mortality rates). However, for other products, long-term guarantees may carry significant risks and can be costly down the road.
- A general rule of thumb is to avoid non-cancelable contracts, for the simple reason that there is no chance to amend contract and rates when experience turns for the worse.
- With regard to guarantee on capital or investment in the products, as historical trend on investment may not repeat itself, there is the danger of mis-pricing if we rely totally on past investment performance. We would need to assess the range of potential outcome and severity, to understand and estimate the cost of such guarantees. In some of these situations, sophisticated tools and techniques may be required, including stochastic modeling, simulation, scenario testing and analysis.

- Life insurance companies would need to consider the use of Market Value Adjustment, surrender charges etc to mitigate the financial impact of surrenders and terminations, particularly when these can bring favorable consequences to the policyholders.
- An important point to remember the problem always starts out small. A small problem can grow very quickly and blow up in our face if we move our eyes away.

Health Insurance products

With improving longevity and high medical costs associated with major illnesses, health insurance products will become an increasingly important component of the insurance program of individuals and families.

In managing the healthcare costs and their impact on the financial health of life insurance companies, we would need to understand the interests and drivers of the various key stakeholders. These include medical providers (such as doctors and nurses), hospitals, clinics, manufacturers of medical equipments, laboratories, pharmaceutical companies, pharmacists and others. We would need to address the impact of these stakeholders on the health insurance costs, and see how they may impact the frequency and unit cost of health care.

Life insurance companies should watch out for the trend that the public sector and government may be shifting a larger proportion of the healthcare cost to the individuals and private sectors, all or part of which may get passed on to the life insurance companies (depending on the health insurance product and benefit design).

Life insurance companies should also understand that with the changing technology and advances in medical science, the nature of care is changing. Hospital care today is very different from the past, and it will be very different in the future -- try visualize what a hospital is going to be like ten years from now. All these make the guaranteeing of healthcare insurance premium rates over a long duration next to impossible.

Continuous evolution will change the healthcare scene and delivery. Given what we have experienced over the last couple of decades, we can be sure that changes will continue to happen in the areas of day surgery, convalescence hospital, nursing home, managed care, preferred provider arrangement etc.

Life insurance companies may have no choice but to deal with health insurance on a short term, preferably on a year-by-year basis.

Expense management

Controlling and reducing the expenses is a contradiction and challenge, particularly for the smaller life insurance companies. Companies would need to build up the scale to

achieve lower unit cost and become competitive, but this means higher expenditure at the beginning. And these companies would need to make sure that they have sufficient financial resources and muscles to remain solvent, when they go after a fast growth strategy.

For small, new life insurance companies, there is potentially huge expense overrun in early years. Significant investment is required in a number of areas. Among other things, these companies would need to bring in the computer technology to deliver good customer service and to achieve cost efficiency.

Striking a balance between expansion and cost control is indeed a challenge for small, new life insurance companies.

Catastrophe

Catastrophe has become a big concern for life insurance companies, because of the difficulty in costing them, and the devastating impact they may bring about.

Life insurance companies have been able to avoid and mitigate this risk through various measures:

- Exclusion for losses arising from terrorist acts.
- Transferring the risk of multiple deaths / losses to re-insurers, although the cost has been going up and the extent has been significantly reduced.
- Avoiding concentration of risk – air travel, convention.

But it is crucial for the life insurance companies to remain vigilant, as new sources of risks are bound to arise – SARS, terrorist attacks.

Management Information and Analyses

Life insurance companies need management information to analyze the experience and identify trend. To this end, financial projection, scenario testing, stochastic modeling are the major tools that are often used.

Life insurance companies would need to go beyond the surface to get to the true picture. Examples:

- Cohort analysis of agent persistency and productivity.
- Termination and lapse experience by duration, product groups and age.
- Critical illness claims by age bands, gender, and policy duration.

Risk of self-deception

There is a tendency to believe somehow we will be able to grow out of our troubles and problems. Sometime we harbor the hope that government may come in and bail us out, if things get really bad.

As a result, we tend to find ways and reasons to justify our assumptions and results we hope to see. The classic example is to tweak the pricing assumptions to come up with the premium rates which marketing wants to see or which our competitors are offering. Another example is hoping that the interest rate will stay and not drop, and continuing to sell guaranteed premium products priced at interest rates higher than what can be attained.

Unfortunately, the world is becoming more unpredictable, and things can go from bad to worse very quickly. There is no easy solution to this, but we just cannot continue to deceive ourselves.

Conclusion

We live in a world in which changes abound, and risks are rife. Life insurance companies have to identify, analyze, manage and mitigate these risks. This paper covers the plausible range of risks that life insurance companies are to deal with. Our intention is to give some flavor of what the risks are about and what are involved. They are certainly not exhaustive. It is hoped that this paper will generate some further work and discussions on risk management of life insurance companies, particularly in the context of Asian markets.