RISK MANAGEMENT IN INSURANCE COMPANIES

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ABSTRACT

This research paper elaborates the concept and proceeds to explain risk identification, distinguishes risk management in life insurance & general insurance and details the risk management process. It also explains the risk management system and structure within the organization as per the IRDA Guidelines. Finally it forays on the vital issues and strategies relevant to the insurer, the policy holder and the IRDA as regulatory authority.

Keywords: Risk Management; Life Insurance; General Insurance; Risk Management Process; IRDA Guidelines

INTRODUCTION

Insurance companies are in the business of taking risks of various kinds. All over the world, the insurance companies write the policies that deal with specific risks, and in many cases even underwrite exotic risks. As a direct corollary, therefore insurance companies should be good at managing their own risks. However the reality is little far from that. While these companies are good at assessing insurance risks for its policy holders, but not very good at setting up structures internally for managing their own operating and business risks. In short,

Insurance = Collective bearing of Risk

In other words, Insurance is nothing but a system of spreading the risk of one onto the shoulders of many. While it becomes somewhat impossible for a man to bear by himself all kinds of losses right from his own health, property or interest arising out of an unforeseen contingency, insurance is a method or process which distributes the burden of the loss on a number of persons within the group formed for this particular purpose. Risk and uncertainty are inseparable twins. While the risk as such cannot be averted, it is to be recognized that it has multi-faceted outcomes. The insurance companies cover the uncertainty of a financial loss. The insurance companies’ do not have any command on uncertainties. This makes it essential that these companies favour of a practice that becomes instrumental in spreading the loss. Basically the features of risk in insurance sector are enumerated below:

Insurance indemnifies assets & income: Every asset has a value and generates income to its owner. There is a normally expected life-time for the asset during which time it is expected to perform. If the asset gets lost earlier, being destroyed or made non-functional through an accident or other unfortunate event the owner is prejudiced, efforts have to be made to mitigate consequences of such adverse circumstances which form part of risks.
Insurance is the science of spreading of the risk: It is the system of spreading the losses of an individual over a group of Individuals.

Insurance is a method of sharing of financial losses: A few from a common fund formed out of contribution of the many who are equally exposed to the same kind of loss. What is uncertainty for an Individual becomes a certainty for a Group.

Risk Identification

The insurance industry has had to struggle with drastic, sometimes sudden changes to regulations, government policies, and risks associated with natural disasters and environmental trends. Predictive models, which are often called generalized linear models (GLMs), have become the standard for insurance companies around the world. GLMs are used to foresee the possible risks a particular sector may face by accounting for the various problems that may arise in the particular area of the insurance industry. Once equipped with this knowledge, insurance companies can price policies in a way that will ensure their continued solvency and service to consumers, as well as their own profits. Risk is the possibility of losing economic security. Most economic risk derives from variation from the expected outcome. Insurer uses rigorously technique to identify, monitor and manage the risks. Some of the techniques are stochastic modelling, value at risk, tail risk, economic capital calculations, stress tests and more and identify negative impact. Identification of risk is determination of risk where does it lie. The risk may be relating to property, Life, Liability and Nature. Fire, theft, damage, natural calamities are the various hazard. Various kinds of hazards are briefly explained here:

Property Loss: The factors responsible for loss are identified and evaluated for the purpose. The insured and uninsured perils are identified. Replacement possibilities are calculated on the basis of valuation. The book value is the minimum loss value of the property because it denotes the purchase price and depreciation of the property. But it is not economic value which is the real loss of the property. Market value is very near to economic value. If the firm does not get value of the property any benefits of use of value; it will be equal to market value. Replacement cost is considered for insurance as it is the cost of replacement of damaged property but it exceeds the market value as the new property value increases due to inflation. Fire insurance, marine insurance, motor insurance, machine insurance, profit insurance etc. are the methodologies of loss deduction due to risk.

Large loss: The size of the loss must be meaningful from the perspective of the insured. Insurance premiums need to cover both the expected cost of losses, plus the cost of issuing and administering the policy, adjusting losses, and supplying the capital needed to reasonably assure that the insurer will be able to pay claims.

Life Risk: Human life is exposed of several risks e.g., old, age, death, health, accident and so on. Some responsibilities such as education and marriage of children, starting of their career, business responsibilities, key men employees, etc. are also attached with human life. Life insurance policies, health insurance, key man insurance etc. are prevailing to minimise the loss of human life.

Liability: Liability mainly legal liabilities arise because of contractual relationship. Third party insurance of motor insurance, product liability and professional liability and many new liabilities are added in recent years.

Other Risks: There are several other risks which influence the cost and production. Profit insurance is taken for the purpose. Machine breakdown and crop insurance etc. are the recent examples of other risks which are separately insured to reduce the loss can used by such risks. Risks are measured using probability methods. Last experiences and variance analysis with standard deviation are used for measuring risks. The probability is modified with the present situation and future expectation.

Control of Risk: The risks are controlled through insurance with the principle of pooling; cooperation and transfer of risks. Insurance of risks are becoming a gradual and continuous process. The Indian experience is very positive wherein insurance is expanding with more than 15 percent per annum.
Risk Management in Life Insurance

The life insurance industry has long been keen to make note of the changes that could affect its exposure to risk and financial loss. Over the many decades of its existence, the insurance industry has become quite proficient at predicting the future and adapting according to the dangers it foresees. This is largely due to the advent of predictive models, a tool used throughout the industry to calculate risk and price coverage accordingly.

**Solvency Margin:** The insurer makes assumptions into future for parameters such as mortality, morbidity, expenses, interest etc. Sub regulation (b) of Regulation 5 of IRDA Regulations (Assets, Liabilities and Solvency Margin of Insurers) 2000; specifies that the best estimate assumption shall be adjusted by an appropriate Margin for Adverse Deviation (MAD) which is dependent upon the degree confidence. The purpose of MAD is to build a buffer for miss-estimations of the best estimate or adverse fluctuations. But it does not cover for volatility and catastrophe risks for which separate excess assets known as Solvency Margin should be provided by the insurer.

**Risk Based Capital:** Risks based capital includes asset default risk, mortality morbidity risk, volatility risk, catastrophe risk, margin risk and fund risk. Each company needs to develop implement and maintain appropriate and effective procedures to manage its capital position, i.e. ongoing minimum capital requirements, and future capital requirements. The capital management planning identifies the quantity, quality and sources of additional capital required, availability of any external sources, estimating the financial impact of raising additional capital, taking into account the plans and requirements of various business units of the company. Risk Based Capital is an amount of capital based on an assessment of risk that a company should hold to protect policy holders against adverse developments. Risk based capital involves identifying the key risks and quantifying them. The kinds of risks faced by insurance companies are listed with a brief description:

- **(i) Insurance Risk:** It is underwriting, risk associated with the uncertainty of business written in the future
- **(ii) Market Risk:** It is the risk associated with movements in interest rates, forcing exchange rates or asset prices lead to an adverse movement in asset values
- **(iii) Credit Risk:** If another party fails to perform them in time i.e. If the party fails to pay the credit. So, allowance should be made for the financial effect of non-payment of reinsurance and of the non-payment of premium debtors.
- **(iv) Liquidity Risk:** It is the risk that a firm has insufficient financial resources to meet its obligation as they fall due or can only secure the resources at excessive cost.
- **(v) Operational Risk:** It is in the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and system or from External events.

It is common knowledge that life insurance companies are subject to 3 major risks while entering into contracts with their policy holders: first, the mortality rate of the insured lives may turn out to be higher than anticipated second, the management expenses of the companies may be higher than those forecast and third, circumstances may lead to a portfolio yield which is lower than that assured while calculating the premiums.

Risk Management in General Insurance

**Solvency Margin Formula:** IRDA’s relevant regulations prescribe required solvency margin (RSM) at 20% of the net premiums or 30% of net increased claims whichever in higher.

**Risk Based Capital:** Risk Based Capital (RBC) formula comprises asset risk, credit risk, underwriting loss, underwriting premium risk and off balance sheet risk.

**Reserving:** The importance of proper reserving cannot be over-emphasised. The failure to provide adequately for future claims is attributed to ‘under reserving’ or ‘under provisioning’. Reserves can be
Alternate Risk Managements: These are several alternate risk management strategies such as risk transfer (reinsurance), risk hedging through interest ratio etc. longevity bonds and managing financial market risks.

Solvency I

Solvency I is based on minimum solvency standards. The solvency I directive adopted in 2002 left the solvency calculation unchanged but only adjusted some other components. Solvency requirements should be fulfilled at all times rather than only at the time the financial statements are drawn up. All life insurers are required to Gold capital of at least the Solvency I minimum guarantee fund, or the Solvency I required solvency margin plus the resilience capital requirement. Solvency capital requirement will be calculation by applying either the standard approach or the insurer's won internal risk model.

Solvency II

Solvency II requires adequate capital backing for the volatility of claims. It assesses the capital requirements in which lives of business may exhibit above-average volatility the loss rations of five non-life lives of business. European Union (EU) adopted solvency I 2002 which was converted to solvency II in early 2003. EU commission is expected to adopt the solvency II directive in mid 2007. After its adoption by EU Parliament and the council of Ministers, the implementation is scheduled to be complete by 2010. One of the objectives of Solvency II is to establish a solvency capital requirement which is better matched to the risks of an insurance company. The characteristic of solvency II are based on principles and not rules. These are two levels of capital requirements under solvency II, i.e., The Minimum Capital Requirement (MCR) and Solvency Capital Requirement (SCR). MCR is the minimum level below which ultimate supervisory action will be triggered. SCR should deliver a level of capital that enables an insurance undertaking to absolute significant unforeseen losses and gives reasonable assurance to policy holders that payment will be made as they fall due. Solvency II deals with quantitative requirements, supervisory review powers and for insurer's internal control and risk management and disclosure and transparency to reinforce market mechanism and risk based supervisors. It reinforces on risk/return fundamentals.

Risk Management Processes: Managing risks in Insurance Industry is imperative for achieving success in competitive markets. Risk management processes are cyclic process which starts from identification of a risk and it may result in identification of another new risk. The company need to have a process (or processes) in place for risk management to be effective. Here are the five steps the company can use for risk management:

(1) Identify Risks – Identify risks that affect the company (positively or negatively) and documenting their characteristics

(2) Assess & Analyse Risks - Assess the risk impact, Analyse the probability of risk occurrence and prioritize the risks, numerically analyse the effect of identified risks on the companies’ objectives i.e. usually on cost, schedule and scope targets.

(3) Plan Actions – Explore all the possible ways to reduce the impact of threats (or exploit opportunities). Plan actions to eliminate the risks (or enhance the opportunities). Action plans should be appropriate, cost effective and realistic.

(4) Monitor & Implement the Action – Track the risks throughout the project. If risks occur then implement the risk strategy based on action plan
(5) Measure the effectiveness & Control the risk impact - Measure the effectiveness of the planned action and controlling the risk impact by understanding risk triggers & timely implementation of planned actions. (Diagram)

Source: George E. Rejda: Principles of Risk Management and Insurance

IRDA Guidelines and its impact on insurance sector: The U.S. Enterprise Risk Management (ERM) uses culture, currency, regulation, economic factors, geographical differences Time Zone Language, distance from home office, credentials, loss of control etc. are used for identification of a risk and operational expenses of business, revenue loss, and normal levels of production, pre-loss situation and post-loss Situation are studied to identify the risk..

Source: The U.S. Enterprise Risk Management (ERM)

Based on the ERM Model as depicted above and emerging from the Global financial crisis of 2008, Insurance Regulatory & Development Authority (IRDA) issued a set of Guidelines of Corporate Governance in 2010, which contained a reference to the setting up a mandatory Risk Management Committee (RMC). The RMC has to lay down a risk management strategy across various lines of business and the Operating Head must have direct access to the Board. However IRDA left it to the companies in the Insurance sector to work out the details of how risk management functions were to be suitably organized by the respective companies, given their size, nature and complexity of the business. But that should in no way undermine the operative independence of the risk management head. Because of this leeway, most of the Indian insurance companies have given the risk management responsibilities to their actuaries, which is not a very strongly recommended path.
Risk Drivers

In an insurance company, cash flows are organized in two streams: (a) inflows—premiums, investment incomes, and refunds etc. (b) outflows—claim payments, reinsurance premium, agent remuneration, salaries, interest and dividends to investors and so forth. Thus insurance products could be considered along these two flows. In addition, insurance products rely on models dealing with longevity/mortality, morbidity, economic conditions or market conditions. There is a large risk that any of these assumptions or models could be incorrect, leading to first, the pricing risk and the solvency risk—that arises from inadequate reserves and the company runs out of capital. As many insurance companies have large fixed income holdings or equity position, there is also credit and market risk associated with their investment portfolio. Moreover, the processes, people and the systems of an insurance company are also exposed to risks. These are operational risks and present throughout the company. Additionally, like other corporations, an insurance company is exposed to other strategic risks such as liquidity, reputation, legal, business planning and so on.

The time lag between selling of an insurance coverage and the claim payments can be extremely long in life insurance sector. This lag makes life insurance particularly a difficult to manage. There are also a variety of cultural reasons that complicate insurance risk management. There is a strong belief by some insurance companies that the insurance business is strictly an underwriting game. This essentially means that if an insurance company underwrites “the right risks at the right prices”, the other key insurance activities (i.e. investment, claims handling, reinsurance and so on) “can take care of themselves“. Under these circumstances, risk management functions obviously take a back seat.

The Risk Management within the insurance company entails a strong governance structure so that the Board and the Management should know how risks are being managed. This involves appointing a Chief Risk Officer (CRO) for risk management and the organizational culture too should support it. In large insurance companies, it is common to form a separate risk management unit staffed by a multi-disciplinary team. The work of this team is typically facilitated by designated persons in each of the various departments such as underwriting, legal/compliance, actuarial, finance, marketing and sales, policy servicing, claims, IT and so on. The management should always be aware about the dangers of undermining the independence of the department and should ensure that the dangers of risk-taking and risk monitoring are independent. To ensure this, there are a few well known frameworks available such as ISO 31000 risk management standard and the COSO ERM. There is also another framework used by S & P and A & M Best in their ratings as well. Few of the governance structures are given below:

Source: The U.S. Enterprise Risk Management (ERM)

A CRO should ensure that risk management in the organization of the insurance company is centralized rather than being carried out from silos. He should functionally report to someone, like the Risk & Audit Committee, while administratively he could report to a CXO such as the Chief Financial Officer (CFO). This gives the CRO the independence and the ability to ask tough questions to the Top Management. Structurally, there are several choices on where the CRO should be placed in the organization.

Franchise Versus Policy holder Interests: To appreciate the risk environment better, a CRO should understand the nuances among the policy holders’ interests, franchisee’s interests and other stakeholders’ interests. The policy holder interests represent the objectives behind insurance policy
purchases by the policy buyers. Regulators enforce the protection of policy holder’s interest. Franchisee interests are the objectives of the investors or owners who have provided the money to capitalize the company and would want the insurance company to grow and make profits. Mostly policy holder and franchisee interests are not in conflict, but there are times when they can diverge. For example, when the investors are looking to exit the company, the interests definitely could diverge. What is good for the company may not necessarily be good for existing policy holders. A CRO should understand this difference and should track risks separately if required.

Three lines of defense Model: The three-line defense model is one of the most popular governance models. It lays down very specific responsibilities for each line of defense while ensuring independence.

![Diagram of Three Lines of Defense Model]

Table 1. Three lines of defence governance model

The first line of defense is the primary responsibility for strategy, performance management, and risk control which lies with the Board, the CEO and the senior management. The second line of defense is oversight of risk framework by the risk committee, CRO, the risk management functionaries with their counterparts in other areas. The third line of defense is the stringent internal audit that ensures the independence and the effectiveness of the group’s risk management systems.

The CRO Role

Ideally, as the CRO is the main facilitator of the company, all risk-related decisions should have his inputs. However, at the very least, a CRO should have the following elements in his role:

- Enterprise Risk Management (ERM)
- View of the Risk Control Programmes
- Ensuring the common risk language across the organization
- Managing the risk view through the Risk Dashboard

Enterprise Risk Management: Through Enterprise Risk Management (ERM) in a company, risks are understood, managed and used for decision making. In a robust implementation, a CRO becomes focal point of the ERM universe. In the ERM role, a CRO then becomes the owner of risk management in the company. The following set of accountabilities should become of his/her key performance indicators (KPI):

- Ensure that the company has the right risk framework
- That there is sufficient management buy-in and the company has provided the resources with the right quality and quantity.
There is a process and rigour to the risk assessments

All risk mitigation strategies and tactics are adequate. Wherever there are gaps, a CRO should ensure that there are action plans to fix them up.

Risk factors become central to all key decisions.

Ensure that the perceptions about risks in the organization are the same and that there is a common risk language in the organization.

The Key Risk Indicators (KRI) are in place to monitor risks regularly.

The organizational structure and the key risk control programmes are depicted here:

**Key risks control programmes**

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<tr>
<th>Board</th>
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<tr>
<td>Risk Committee</td>
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<td>Chief Risk Officer</td>
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- **Credit Risk**
  - Chief Credit Officer

- **Market Risk**
  - Treasury
  - Asset/Liability Manager

- **Insurance Risk**
  - Actuaries

- **Operational Risk**
  - Operational Process Risk Management
  - IT Internal Audit
  - Actuaries

- **Strategic Risk**
  - Senior Management
  - Compliance
  - Legal

*Table 2. Key risk control programmes*

The key risks in the insurance company are those of underwriting, market, credit, operational, liquidity, and strategic (reputation, compliance, legal/compliance, agency and so on.) Each of the above said risks should be typically owned by a department, which will then set up procedures, put systems in place and have the right people to manage them. However the effectiveness of a set up has to be independently verified and monitored by the CRO.

**CONCLUSION**

**Emerging Strategies**

- Risk is inherent in any walk of life in general and in financial sectors in particular. Due to regulated environment, banks could not afford to take risks. Insurance companies are exposed to severe competition and hence are compelled to encounter various types of financial and non-financial risks. Risks and uncertainties form an integral part of insurance companies which by nature entails taking risks which are explained above.

- It is vital to deepen the collaborative dialogue between industry and regulators, to deepen shared understanding of the challenges and opportunities for strengthening risk management capability.
There is a need to make sure that bureaucracy and costs are minimised, & business benefits maximised. The main goal is improved risk management, not regulatory compliance. IRDA has issued a rich variety of guidelines to be pursued by the insurance companies rigorously within the risk management framework.

The insurance companies need to upgrade their credit assessment and risk management skills and retrain staff, develop a cadre of specialists and introduce technology driven management information systems.

Finally, the role and responsibilities of CRO discussed above indicate the strategies to be pursued by the companies regularly mitigate the impact of risks during the crises and protect the stakeholders.

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