RISK MANAGEMENT –TO BECOME OR SHOULD BECOME A COMPETITIVE ADVANTAGE FOR THE ROMANIAN INSURANCE COMPANIES

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Risk management has always been considered a process that is applied everyday by everyone, be it natural person or legal person, sometimes without even realizing it. The complexity of the process differs greatly taking into consideration the external and, in the same time, the internal environment of the respective person. The importance of the risk management process was stressed out by many experts and advisors such that each industry introduced entire sets of procedures and even developed positions (departments) inside the companies in order to take care of this activity.

Only in the last few years, the insurers who, paradoxically, are those who undertake other people's risks and, at the same time, advice their customers on adopting adequate risk management policies, have admitted to having problems with the risk itself. An efficient risk management definition has to encompass anything from the accurate and complex analysis of quantifiable risks to the selection, classification and contractual definition of risks.

Examples as Metropol, Grup As and Asigurari Global (which bankrupt) represented the main causes for which the Romanian insurance companies have become more conscious of the necessity to implement strong risk management systems, in spite of the permanent changes of the market and also of the lack of experience of the persons charged with this task.

A coherent risk management policy became a competitive advantage for those insurance companies that saw the importance of this process – needless to say, it was much easier for those companies part of multinational companies that adapted their group's risk management policy. The main effects of implementing a comprehensive risk management process consist in better underwriting, better investments of the company's resources and even better contractual relations with the international partners (reinsurers).

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The rationale for insurance business is to take on risk. The management of that risk is a very important part of the operations of entities. **Risk management** is a continuous process that should be used in the implementation of the strategy of the undertaking and which should allow an appropriate understanding of the nature and significance of the risks to which the undertaking is exposed.

The objective of risk management is to identify, evaluate, mitigate, monitor and control all material risks to which the undertaking is exposed, both at the internal and external levels.

The past decade has seen a dramatic rise in the number of insolvent insurers. The ostensible causes of these insolvencies were myriad. Some of the insolvencies were precipitated by rapidly rising or declining interest rates. Others resulted from losses on assets such as junk bonds, commercial mortgages, real estate and derivatives. Mispricing of insurance policies, natural catastrophes, and changes in legal interpretations of liability and the limits of coverage hurt still others. The "churning" of policies by unscrupulous sales agents, insolvencies among the reinsurers backing the policies issued, noncompliance with insurance regulation, and malfeasance on the part of officers and directors of the insurance companies affected some as well. But despite the numerous and disparate apparent causes of these insolvencies, the underlying factor in all of them was the same: inadequate risk management practices. In response to this, insurers almost universally have embarked upon an upgrading of their financial risk management and control systems to reduce their exposure to risk and better manage the amount they accept. In short, the industry has turned to financial risk management techniques as a way to improve performance.

Firm managers are interested both in expected profitability and the risk, or variability, or reported earnings or market value. The latter can be rationalized by the existence of non-linear costs across the range of profit states associated with any given expected value. The non-linearity is associated with managerial incentive effects, the tax structure, the costs of crisis, and/or forgone investment opportunities. In any or all of these cases, the firm is led to treat the variability of earnings as a choice variable that it selects, subject to the usual constraints of optimization.

Insurers are in the risk business. In the process of providing insurance and other financial services, they assume various kinds of actuarial and financial risks. Over the last decade much has been written of the role of insurers within the financial sector. Suffice it to say that market participants seek the services of insurers because of their ability to provide actuarial risk pooling through their major product lines of life, property/casualty and health insurance, pension products, annuities, and other financial instruments. At the same time, they are major providers of funds to the capital market — particularly to the fixed income sectors. In performing these roles they generally act as a principal in the transaction. As such, they use their own balance sheet to facilitate the transactions and to absorb the risks associated with them. Therefore, it is here that the discussion of risk management and the necessary procedures for risk control has centered.

The risks contained in the insurer's product sales, i.e., those embedded in the products offered to customers to protect against actuarial risk, are not all borne directly by the insurer itself. In many instances the institution will eliminate or mitigate the actuarial and financial risk associated with a transaction by proper business practices; in others it will shift the risk to other parties through a combination of reinsurance, pricing and product design. Only those risks that are not eliminated or transferred to others are left to be managed by the firm for its own account.

This is the case because the insurance industry recognizes that it should not engage in business in a manner that unnecessarily imposes risk upon it, nor should it absorb risks that can be efficiently transferred to other participants. Rather, it should only manage risks at the firm level that are more efficiently managed there than by the market itself or their owners in their own portfolios. In short, it should accept only those risks that are uniquely a part of the insurer's array of services.

Elsewhere it has been argued that risks facing all financial institutions can be segmented into three separable types from a management perspective.

These are:

a) risks that can be eliminated or avoided by standard business practices;
b) risks that can be transferred to other participants, and
c) risks that must be actively managed at the firm level.

As an alternative to the actuarial decomposition of risk which is unique to the insurance industry, standard financial risk definitions are increasingly being proposed in the industry. For the sector as a whole, these risks can be broken into six generic types: *actuarial, systematic, credit, liquidity, operational and legal risks*. Of course the risks associated with the provision of insurance services differ by the type of service rendered.

In the first of these cases, the practice of **risk avoidance** involves actions to reduce the chances of idiosyncratic losses from standard insurance activity by eliminating risks that are superfluous to the institution's business purpose. Common risk avoidance practices include at least three types of actions. The *standardization of process, insurance policies, contracts and procedures* to prevent inefficient or incorrect financial decisions is the first of these. Another is the *construction of portfolios* on both sides of the balance sheet that benefit from diversification and the application of the Law of Large Numbers and Central Limit Theorem, which reduce the effects of any one loss experience. Finally, the *implementation of incentive compatible contracts with the institution's management* to require that employees be held accountable is the third. In each case, the goal is to rid the firm of risks that are not essential to the financial service provided, or to absorb only an optimal quantity of a particular kind of risk.

There are also some risks that can be eliminated, or at least substantially reduced through the technique of **risk transfer**. Markets exist for many of the risks borne by the insurance firm. Actuarial risk can be transferred to reinsurers. Catastrophe risk can be offset somewhat by undertaking a position in catastrophe futures and perhaps even in catastrophe bonds. Interest rate risk can be hedged or transferred through interest rate products such as swaps, caps, floors, futures, or other derivative products. Insurance policies and lending documents can be altered to effect a change in their duration and convexity. Equity market risk can be reduced with an appropriate futures position in equities. In addition, they can offer products which absorb some financial risks, while transferring some of these risks to the purchaser.

The extent of the differences, across risks of different types, is quite striking. **Actuarial risk** is carefully modeled, but reported at infrequent intervals. There is often a lack of follow-up to see whether, based on the insurer's experience, the actuarial assumptions have been appropriate. **Systematic risk**, particularly interest rate risk, is typically measured by life insurers on both sides of the balance sheet, and by property/casualty insurers at least on the asset side. **Interest rate risk** exposure is discerned using measures of effective duration and convexity, scenario simulations, or a combination of the two. For assets it may be reported as often as weekly or monthly, but for liabilities it is generally reported only quarterly or annually. The **credit risk** process is a qualitative review of the performance potential of different bonds and borrowers. It results in a rating, periodic re-evaluation at reasonable intervals through time, and on-going monitoring of various types or measures of exposure. **Liquidity risk**, on the other hand, more often than not, is dealt with as a planning exercise, although some reasonable work is done to analyze the effect of adverse events that affect the firm.

The analytical approaches that are subsumed in each of these analyses are complex, difficult and not easily communicated to non-specialists in the risk considered. *The insurer, however, must select appropriate levels for each risk and select, or at least articulate, an appropriate level of risk for the organization as a whole*. How can and is this achieved?

The simple answer is "not very well." Senior management often is presented with a myriad of reports on individual exposures, such as specific credits, and complex summaries of the individual risks, outlined above. The risks are not dimensioned in similar ways, and management's technical expertise to appreciate the true nature of both the risks themselves and the analyses conducted to illustrate the insurer's exposure to them is limited. Accordingly, over time, the managers of specific risks have gained increased authority and autonomy. In light of recent losses, however, things are beginning to change.

At the analytical level, **aggregate risk exposure** is receiving increased scrutiny. To do so, however, requires the summation of the different types of risks outlined above. This is accomplished in two distinct, but related ways. In the first approach, *risk is measured in terms of variability of outcome*. Where possible, a frequency distribution of net returns is estimated, from historical data, and the standard deviation of this distribution is estimated. Capital is allocated to activities as a function of this risk or volatility measure. Then, the risky position is required to carry an expected rate of return on allocated capital, which compensates the firm for the associated incremental risk. By dimensioning all risk in terms of loss distributions, and allocating capital by the volatility of the proposed activity, risk is aggregated and priced in one and the same exercise.

The second approach is similar to the first, but depends less on a capital allocation scheme and more on cash flow or earnings effects of the implied risky position. This approach can be used to analyze total firm level risk in a similar manner to the first approach. Again, a frequency distribution of net returns from any one type of risk can be estimated from historical data. Extreme outcomes can then be estimated from the tail of the distribution. Either a worst case historical example is used for this purpose, or a three or four standard deviation outcome is considered. Given the downside outcome associated with any risk position, the firm restricts its exposure so that, in the worst case scenario, the insurer does not lose more than a certain percentage of its surplus or current income. Therefore, rather than moving from volatility of equity value through capital, this approach goes directly to *the current earnings implications from a risky position*. The approach, however, has two very obvious shortcomings. It is cash flow based, rather than market value driven; and it does not necessarily directly measure the total variability of potential outcomes through *a priori* distribution specification. Rather, it depends upon a subjectively pre-specified range of the risky environments to drive the worst-case scenario.

Both measures attempt to treat the issue of trade-offs among risks using a common methodology to transform the specific risks to firm-level exposure. In addition, both can examine the correlation of different risks and the extent to which they can, or should be viewed as offsetting. As a practical matter, however, only two of the insurers interviewed in a study [1] that were using these approaches viewed the array of risks as a standard portfolio problem. Rather, they separately evaluate each risk and aggregate total exposure by simple addition. As a result, much is lost in the aggregation. Perhaps over time this crucial issue will be addressed more widely.

Risk management for Romanian insurers

Questions such as "Why did it occur?" or "How that it was not identified in due time?" can be generated inside one company by unauthorized activities of the personnel, a loosen

[1] CEIOPS' study regarding risk management systems for insurers across Europe, 2001

internal audit and a non-participating management style. In such situations, the risk management policy lacks or it is implemented just for the sake of having one.

In the case of an insurance company, such questions can represent the beginning of the end – for instance, the quality reduction in the clients' services will determine in the end a severe reduction in the liquidity ratio and, more important, a reduction in the clients' portfolio.

The underwriting process can be one hot spot for the risk managers of the insurance companies. Even if the selling department is more interested in acquiring as many clients as possible, by taking in as many exposures as possible (life, property, liability), this can generate a severe exposure in terms of portfolio concentration or under-evaluated exposures.

The identification of the risks represents, as said before, the most important part in the risk management process. It must be done throughout the entire company (top-bottom) and it must be backed up by constant communication between departments and management team and personnel. Sometimes, a top-bottom approach (a dictatorial management style) can suffocate certain solutions (feasible) and impede them to be put into practice, thus reducing the effects or the frequency of a certain risk.

Some insurance companies, even if they succeed in identifying their risks well enough (especially the operational ones), loss themselves and loss control over them making impossible to fight them. A possible solution: better IT platforms – a centralized one for each company – that will insure a controlled and consistent management of the risks.

Exquisite risk identification does not, nevertheless, guarantees a good risk management. The lack of internal procedures or of responsible persons in charge with risk mitigation, backed up by an inefficient internal control or a lack of informatics system inside the company can have negative on the general status of the insurance company's activity.

Some insurance companies own what is called "the risk ledger" – a general collection of risks that insurers agreed and acknowledged to take over when it started the risk mitigation process. Such ledger represents the form of coping with the risks that the general external environment (economic conditions, legal changes, market changes, technological changes) and the internal activity (the complexity of the organizational structure, the nature of the activities, the training of the personnel and its fluctuation) of the company are generating, being them market risks, legal risks, financial risks, operational risks a.s.o.

If the identification phase can be carried out by any employee of the insurance company, the evaluation of the risk (in terms of time, money and persons) should remain the prerogative of the risk manager. Based on the frequency and severity of the risk, the risk manager is the one that proposes different solutions for protecting the company (or its clients) against that specific exposure.

The evaluation process must include both the controllable risks and the non-controllable risks for the insurers. In the case of controllable risks, the risk manager must establish if the company will take over entirely those risks or the procedures necessary to reduce them. In the case of non-controllable risks, they must decide whether the company will accept the risks or will eliminate/reduce the activities that are exposed to those risks.

The evaluation implies also "what-if" scenarios, even in force majeure circumstances, in order to better response to the actual exposure. The risk profile of any insurer is constantly changing, due to new risks occurring and therefore, the insurance company must be permanently able to:

- Apply control strategy and procedures;
- Verify the application of procedures within the company.

Our national legislation stipulate also the existence of an internal Risk Management Committee, assigned to approve the solutions for identified risks, to identify new solutions/ practices to cope with risks and also to develop medium term procedures of risk management for the company[2]. The purpose of this institutional response is to empower one individual, or group, with the responsibility to evaluate overall firm-level risk, and determine the best interest of the company as a whole. At the same time, this group is holding line officers more accountable for the risks under their control, and the performance of the institution in that risk area. Activity and sales incentives are being replaced by performance compensation which is based, not on business volume, but on overall profitability.

Insurance Risk Management Systems

The risk of paying too high a price to raise funds is an important risk, particularly in light of the fact that insurers raise few funds in the competitive capital market. Most of their debt is raised in the form of issuing insurance policies. Policies are written today in exchange for lump sum or periodic premiums, but the amounts and timing of the repayment of these funds are often unknown and may occur within a month or more than 80 years later. Because the pricing of the policies reflects not only expected losses but also the yields an insurer can earn on the funds between the inception of a policy and its termination or the payment of benefits, the interest assumption used in developing insurance prices is of critical importance.

The use of reports and standards for underwriting life/health and property/casualty risks is routine. It is common to have dozens, and sometimes over a hundred "cells" in which to classify the risks. Base rates can be related to a number of factors, such as age, gender, occupation, schooling, health status and history, property characteristics, nature of business, and so forth. These base rates are then adjusted to reflect experience factors (e.g., past claims, driving behavior). While the fair premiums will be a function of interest rates, in practice the premiums charged will not adjust to reflect current interest rates very often. This is probably because it is administratively cumbersome to alter insurance premium schedules every time the interest rates change.

Underwriting limits are commonly established. Authority is limited to a certain amount. While insurance agents may have temporary binding authority, it is a common practice to have a party who is not involved in the policy sale to review the underwriting and make a determination whether the risk will ultimately be accepted and insured. Insurers are typically better at keeping track of sales commissions than in tracking losses to a particular sales agent or underwriter.

However, many of the leading life/health and property/casualty insurers are carefully tracking the experience of their sales and underwriting personnel. If the experience falls outside the norm, it is common to place restrictions on further sales or more severe limitations on underwriting; alternatively, the activities of these sales agents and underwriters could be subject to greater oversight.

Perhaps the area of greatest concern in the area of actuarial risk is the misalignment of incentives between owners of the insurance firm and its sales and marketing staff. Sales managers and marketing personnel are also often rewarded based on volume of sales. Even senior management may sometimes have their compensation tied to sales growth.

[2] Insurance Supervisory Commission's Order 113117/2006 concerning the principles of an internal control system and risk management for insurers, July 2006, Bucharest

An example[3] concerning the three main types of risk management systems that an insurance company may have, includes:

- High impact (low control over risks)
  - incomplete control procedures for major exposures
  - limited or lack of abilities in identifying, evaluating and managing the exposures.
- Medium impact (medium control over risks)
  - Complete and functional control procedures
  - Lack of robust procedures for identification and prevention of future risks
  - Optimization process of company's benefits, compared to the possible risks
  - Classical risk management processes
- Low impact (high control over risks)
  - A clear vision of risk tolerance and general risk profile
  - Appropriate risk control for main types of risks
  - Advanced abilities to identify, evaluate, manage all the risks, based on the risk tolerance
  - Advance implementation of risk management process
  - Permanent optimization of company's benefits, compared to the risks taken over.

Risk management requirements at EU level

The risk management of any insurer became a stringent issue also at the level of Solvency II project. The new system assesses the overall solvency and builds on a more risk-sensitive approach, with incentives for proper risk management.

Risk management plays an important role for solvency. This conclusion is among other studies supported by the report of the London Working Group, in which mismanagement was identified as one of the main causes for solvency problems[4]. It is also in line with the Capital Requirements Directive which implements the Basel II rules for banking and investments (securities) firms in Europe.

Due to its importance, CEIOPS [5]advises on proper internal control system and risk management procedures for each insurance company acting on a national or cross-borders market. Moreover, it proposes a minimum set of general principles insurance undertakings that the insurance companies must comply with.

There is a need for a detailed risk classification building on the work of insurers e.g. market risk, credit risk and underwriting risk. Operational risks should be analyzed and included in the calculation of the capital requirement to the extent feasible. Moreover, when aggregating different risks, their dependencies should be carefully analyzed to decide how, and to what extent, correlation effects should be taken into account.

Certain requirements concerning the minimum content of an appropriate investment plan, taking into account the use of asset-liability management in the undertakings' decision-making process and specific aspects of life assurance as well as non-life insurance are to be applied as a form of coping with exposures (especially operational exposures).

[3] Ganescu Diana: Watch out for the lights!, pg.35, PRIMM insurance & pensions, Nr.2/2008, Bucharest
[4] Steffen Thomas (CEIOPS) : New evolutions of Solvency II project, November 2007, Frankfurt
[5] Committee of European Insurance and Occupational Pensions Supervisors

A participation system of risk management supports the inclusion of high-level general requirements on insurance undertakings to manage their assets and liabilities appropriately, and to invest appropriately recognizing the over all responsibility of the senior management.

Senior management is required to exercise judgment in a sound and prudent manner. The balance between this specific limits on assets and capital requirements on investment risks was termed a "*prudent person plus*" *approach*. An approach using risk-oriented capital requirements seems preferable to very detailed regulatory limits on investment and asset-liability management. The solvency capital requirement should apply to all assets and liabilities. But the capital approach will only prove effective if the solvency capital requirement is sensitive to the combined effects of investment risk and asset-liability matching.

The solvency capital requirement should address those types of risk where material correlation effects could be expected between the asset and liability sides of the balance sheet.

Through this new approach of risk management, insurance companies are required to have an asset-liability management policy, as well as plans or procedures, describing how short-term and long-term risks will be managed in the context of an asset-liability framework. They are required to have an overall investment policy for all their assets, including derivatives, set by the Board of Directors, as well as an investment plan or investment procedures, describing how the overall investment policy will be implemented.

Conclusions

Risk management – competitive advantage? It's useless to confirm what has been acknowledged by thousands of insurance companies all over the world. Or better yet, what has been included in the new legal framework of the European insurance markets – the Solvency II project.

Why is not implemented by all insurance companies? The actual costs for implementing a rigorous risk management policy are considered too much of a burden for limited budgets (especially in the case of small or medium insurance companies). Even if the long term benefits are obvious for everybody, the first phase of implementation is considered too big to cope with.

The alternative for smaller insurance companies remains the externalization of services for specialized consultants or no implementation of risk management. If this decision had little effects in the past, nowadays in the presence of risk-based market and of a risk-based regulation, such a endeavor becomes foolish and impractical for business conduct.

In any case, the new wave of regulation, coming to level all the main insurance markets in Europe, brings with it new concerns for the approach in which the risk takers are considering the possibility of risk dealing, both for themselves and for their clients.

Bibliography

- Babbel David, Santomero Anthony: Risk Mangement by Insurers: An analysis of the process, Wharton Publishing House, 1996, Pennsylvania
- Badea Dumitru, Tudor Bogdan, Novac Laura: Manualul agentului de asigurari, Economica Publishing House, 2008,Bucharest
- Badea Dumitru: *Insurance &reinsurance*. Economica Publishing House, 2004, Bucharest

- Beaver, W. H. and G. Parker, *Risk Management, Problems and Solutions,* 1995, McGraw Hill, New York.
- Fite, D., and P. Pfleiderer, "Should Firms Use Derivatives to Manage Risk?" in *Risk Management Problems and Solutions,* (Beaver and Parker, eds.) McGraw Hill, 1995, New York.
- Văcărel, I., Bercea, F.:*Asigurări şi reasigurări.* Expert Publishing House, 2007, Bucharest
- Ganescu Diana: *Watch out for the lights!,* pg.35, PRIMM insurance & pensions, Nr.2/2008, Bucharest
- Steffen Thomas (CEIOPS) : *New evolutions of Solvency II project*, November 2007, Frankfurt
- CEIOPS: *Risk management and other issues*, July 2007, Strasbourg
- Insurance Supervisory Commission's Order 113117/2006 *concerning the principles of an internal control system and risk management for insurers*, July 2006, Bucharest
- ISO/IEC Guide 73. 2003. *Risk Management- Vocabulary –Guidelines for use în standards*. London