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Risk Based Supervision of the Insurance Companies, An Introduction

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Risk Based Supervision

Introduction

Supervision of financial institutions can be carried out for a variety of reasons and through a variety of techniques and approaches. The basis that is adopted within a particular jurisdiction or country has to reflect the local environment and legislative expectations. This paper advances the argument that all supervisory approaches are risk based in one way or another and that the supervisory efficiency and effectiveness can be improved if the supervisory approach is designed so as to focus on the key risks to which the industry and the financial sector is exposed.

The traditional supervisory approach has been to review the operations of the company to ensure that the company is in compliance with the legislation and regulations and to ensure that the financial statements that have been prepared by the company meet the requirements of the reporting methodology and to ensure that the results are an accurate representation of the facts. This necessitates the use of a risk-based approach. However, the risk to which this approach is exposed is the risk that the audit process (and the process that is used to select the audit criteria) can miss a significant error or misstatement. This is the type of error, or risk, that any audit process can experience.

A second approach to dealing with risk can, but is not required to be a part of the traditional audit style supervisory processes. This is the identification of aspects of the company's operation that will receive more intensive and detailed review. These areas have traditionally been identified as aspects of the business to which companies are exposed that create new, growing, or problematic risks that could present financial problems for the companies. Some of these risk areas might be considered to be early indicators of problems to which the industry or individual companies are exposed.

The risk based supervisory process takes this traditional special review approach one step further so that the process identifies, and focused the review effort on the areas of risk in the company's operation that could impair the viability of the company. The risk-based process does not attempt to audit the financial results of the company nor carry out a comprehensive compliance review. The focus is on the risks in the business and on the management processes for dealing with those risks.

Risk based supervision considers each of the risks that companies face and through a structured process identifies the risks that are most critical to the financial viability of the institution. The supervisory on site review process looks at the management of these key risk areas and focuses attention on the critical net risk exposures. In this way the review will focus on the risks, the management processes, the volatility of the result and the impact on the company.

The process is said to be “structured” because it systematically considers all of the key aspects of the company’s business and within each looks at the risks to that areas of operation. These key areas can be either business lines, geographic areas of operation or operational areas within the company itself. This structured approach, together with the documentation that emerges, breaks the work into manageable pieces. Over time the whole company would be looked at in this way and the most vulnerable areas of the company will be identified for detailed analysis. By keeping the documentation and analysis up to date the supervisor can quickly review the supervisory examination plan for the year and focus resources on the most critical areas.

The conclusion may be that even though the risks are large, the risk management techniques are effective and the net risk exposures are within the risk tolerance of the company.

This requires giving consideration to each risk and the risk mitigation processes that the company has in place to manage the net exposure to risk. The regulator, in using the risk-based approach, will then focus the on-site examination process on the most critical net exposures.

As a result, to understand how this process could work one should consider the range of risks to which insurance companies are exposed, the risk mitigation techniques that could be used to manage the risk exposure and understand some of the “best practices” that well run companies use in such circumstances.

This paper attempts to identify the areas of risk to which companies are exposed and list some of the risk mitigation techniques that are in use.

The Role Of Supervision

Customers of an insurance company look to the company to meet the promises that it makes under each contract of insurance. Insurance is a complex business built around this “promise to pay” on the occurrence of a specified event or in the event that a specified loss occurred. Generally the customer is not an expert on insurance matters and so relies on the integrity and skill of the insurer to meet the obligations promised under the contract.

For a wide range of types of insurance, the insured can expect the coverage to be in force for many years before a claim is made against the insurer. In order for customers to have confidence in the concept of insurance they need to have confidence that the insurer will be able to meet its obligations as they fall due not only at the present but in the future as well. The consequences of companies not being able to meet their promises to pay claims as they fall due can easily lead customers to seek out other means to cover the risks from which they need protection. If there is no other source of adequate protection, people could become more risk adverse and this could constrain the economy more than if adequate insurance were available.

A common role of the insurance regulator is to stand in the shoes of the customer by analyzing the companies so as to provide some comfort to consumers that companies are managing their affairs appropriately so that they are able to meet their obligations to customers of the company. The motivation for supervisors to be involved is to establish and maintain an insurance market in which people can have confidence. This means establishing rules for the behavior of all parties in the market and setting standards to ensure (within reasonable bounds) that the companies that operate in the market have sufficient financial resources to satisfy the claims of customers of the insurer. It also means that adequate rules should exist to ensure that customers are treated fairly and that product prices are reasonable.

It is common for jurisdictions to require licensing of companies that offer insurance products, require licensing of individuals and corporate entities that act as intermediaries to sell insurance to the public and to set rules for the operation of the companies.

The procedures and methodology that a regulatory agency adopts for assessing the financial strength of insurance companies in the jurisdiction (both the analysis process and the on-site examination process) must be consistent with the accounting regime and the regulatory capital regime. Each should be an extension of and support for the other. In this way the risks that are recognized in the determination of the required capital are noted and the other risks are included as a part of the supervisory process. In addition, each of the risks that form a part of the required capital regime is measured and can be assessed as a part of the analysis process. In this way, if an increase in the net risk exposure emerges, the on-site examination process can look at the causes and determine if remedial action is required.

Evolution of a Supervisory Regime

The selection of a supervisory regime for any jurisdiction should reflect a number of factors that are specific to the jurisdiction. An approach that may be appropriate for supervising the insurance industry in one jurisdiction may not be appropriate in another.

When selecting a supervisory regime consideration should be given to the issues raised in this section so that the regime is consistent with the accounting and actuarial standards as well as industry practices that are in place. In addition, recognition should be given to the experience and skills of the management of the companies and the supporting infrastructure of advisors to the insurance industry.

Over time the degree of sophistication of the industry and the supervisory processes can be expected to increase as the industry becomes more strongly established and capable. With these developments, more sophisticated techniques can be introduced into the supervisory system for the jurisdiction.

Therefore, as a country develops so does its ability to support a robust supervisory framework. When a country is in the early stages of economic development, the technical infrastructure on which the insurance supervisor depends may not exist. As the economy develops so does the supporting infrastructure. As the economy matures and becomes a robust economy with a range of checks and balances in place, the insurance regulator is able to depend on a robust technical support system.

In the same sense as the process through which an economy develops and matures is evolutionary, the development of a regulatory and supervisory process should be evolutionary. During this process, it is unlikely that the stages of development of all aspects of the economy match the stage of development of the supervisory process for the financial sector. The pressures for change and development will not be even and cultural and other differences will affect the priority that is placed on making changes in the system as well as the technical infrastructure.

However, it is instructive to consider the stages of development of each element of the technical infrastructure and see the degree to which the two are theoretically in sync. For a supervisory process to be most effective, the supervisory process should be aligned to the stage of development of the economy and the technical infrastructure on which financial sector supervisors may rely.

It is this development process and the varying pressures for change that produces a variety of supervisory responses to establishing what the local rules are, and should be, for the operation of insurance industry. The local supervisory approach and the local capital requirements for the companies that operate in the country should be built on a foundation that is linked to the technical infrastructure that is in place.

In some countries, the local economy has developed and is reaching maturity, but the legislation and regulatory approach has lagged behind. This could be due to the fact that the regulatory system has worked well for the country and there has been no evident pressure to strengthen the approach, to make it more efficient or to make it more flexible.

In other cases, countries have adopted the regulatory standards and supervisory approach from a strong and established market-based economy and the development of a strong local technical supporting infrastructure is lagging behind. This could happen through the process of picking the “best practices” in selecting the legislative and supervisory model for adoption by the country. A mismatch could develop if careful consideration is not given to matching the supervisory model to the stage of development of the technical infrastructure on which that system will rely.

In either of these cases special issues and challenges emerge for the insurance supervisor that can, at least in part, be attributed to the lack of alignment between the stage of development of the technical infrastructure and the supervisory model.

The elements of the technical infrastructure that form a fundamental base on which a strong supervisory system can be built includes professions such as actuaries,

accountants, auditors and others on whom the system depends (such as real property valuation experts). It could also reflect the elements of the infrastructure that are created by government such as the judiciary system, the development of a strong and effective public service and the development of an effective framework for winding-up or liquidating financial institutions. Some elements of the technical infrastructure develop as the capital markets develop in the country and these include the role, responsibility and accountability of boards of directors, the development of corporate governance and the transparency of companies and capital markets.

These are all related and, at least in theory, there should be a correlation between the stage of development of an economy, the stage of development of the financial sector and the degree to which a regulator can rely on the work of others.

In the early stages of the development of an economy one would expect that there would be few actuaries, accountants or auditors with appropriate levels of experience and training to fully meet the needs of the industry and the regulator. One would expect that the judiciary system is not well entrenched so that laws may not be interpreted consistently or in a balanced manner. The supervisory authority may be heavily influenced by political pressures and not have the independence that is required to be fully effective. The public service may not have the training or experience to understand the financial services sector. The capital market may be small, volatile and concentrated. The banking sector may be developing at the same time so it is building up its position as the main provider of personal savings products. However, the banking sector may be growing rapidly as individuals achieve increased financial independence and have the resources to build their savings and they choose to save through the use of bank products.

In this environment an effective regulatory system may be one based on laws that are prescriptive, financial reporting standards that are prescribed by the supervisor, product design and pricing that are prescribed and capital requirements that are easy to apply and understand. This is required because the supervisor is not able to depend on a vibrant technical infrastructure to set and control selected areas of the business and the function of setting rules falls to the regulator. The function of monitoring and enforcing the rules also falls to the supervisor. The supervisory approach in this environment could focus on checking for compliance and ensuring that the rules are followed. The supervisor may adopt a limited risk-based supervisory approach that focuses on the key risks and key areas for which compliance is required.

At the other end of the economic development spectrum one would expect to see a core of experienced professional accountants, auditors, actuaries, etc each with a robust set of standards of professional practice. One would expect the judiciary system to have a sound basis of laws and experience to provide consistency in the interpretation of the law and be seen by the public to be fair in carrying out its duties. One could expect that the supervisory authority is strong and experienced so it is able to operate without political influence. One would expect the financial services industry to be increasingly complex and international in its operations. One would expect the supervisory agency to be staffed with experienced people that can be counted on to apply sound well-founded

judgment to the issues and challenges they face. And, one could expect the banking sector to provide a wide range of products. However, the banking sector may have lost a large portion of the savings market to other non-bank financial services providers (some of which are not regulated in the manner that banks are regulated), and, one could expect that capital markets are well established and a major source of funding for corporate borrowing.

In this environment an effective regulatory system could be based on a system of reliance on the work of professionals, reliance on the work of boards, and the regulatory environment could be permissive so that companies are allowed flexibility in strategic approaches to the market. The insurance market would be free to set prices for products it designs and there is little regulatory interference in the operation of the free market. Accounting systems would be robust, and would be kept up-to-date with new products and instruments. The industry may be increasingly behaving like a self-regulatory authority with defined standards of practice and the power to improve the performance standards for participants in the financial sector. The supervisor may adopt a risk-based approach to supervision linked to a risk based and responsive required capital regime. In this environment, the supervisor can rely on others to set some of the more technical rules that are required to control the industry and the supervisory approach could focus more attention on the areas of risk that affect the financial services sector.

In between these extremes one would observe the development of the economy, the development of the financial services sector and the evolution of the supervisory practices model. These developments would take the form of a gradual increase in the number, skills and experience of the professionals and their standards of practice, a gradual increase in the confidence that the public places on the financial services sector and an opening of the market to new participants with competitive and innovative products and services, and the gradual development of public confidence in the judiciary system to be fair and predictable. However, one would not expect that each of these areas would develop in a uniform manner. This will create a unique economic environment for each country and a unique supervisory response could emerge.

It can also be argued that the model a country selects could establish the level of required technical infrastructure that is required to support the supervisory system and this determines the mix of technical and supervisory practices that are required. This is an equally appropriate way to look at this issue. However, once again there should be an alignment between the supervisory approach and the technical infrastructure. So no matter how a country arrives at the combination of supervisory approach and technical infrastructure that it has or strives toward, it is instructive to review the alignment of the elements of that system.

To put this into context and provide an approach that could be considered, one could simplify the assessment into a two dimensional process. This perhaps ignores many important aspects of an economy but it may help understand the position that is presented. So we will risk the oversimplification.

We could set four approaches for establishing a supervisory model in a country: the Controlled Model; the Limited Reliance Model; the Partial Reliance Model; and, the Full Reliance Model. These models have been selected on the premise that reliance on the work of others outside the supervisory authority increases the level of expertise that can be brought to technical issues and the system can be more efficient, flexible and dynamic when the supervisor can rely on the work of these outside experts.

Within each of these supervisory models consider the following indicators and potential reliance issues: First the technical support – Accountants, Actuaries, Auditors, Industry Associations, Non-executive members of the Board of Director, Corporate governance; then the legislative and legal environment – Judiciary System, Liquidation legislation, Policyholder protection arrangements; third the other aspects of the financial services sector- banking, capital markets; and finally the Supervisory model – Political influence, Corporate governance of the supervisory authority, Control of premium rate setting (and/or policy terms and conditions), Process for valuing assets, Process for valuing liabilities, Degree to which risks are reflected in the required capital approach.

For each of these indicators and reliance issues we can set rough conditions that would place them into each of the supervisory models defined above.

Indicator	Supervisory Model			
	Controlled	Limited Reliance	Partial Reliance	Full Reliance
Actuaries: - number	More companies than actuaries	Large companies have their own actuaries	Most companies have their own actuaries	Companies all have well qualified actuaries
Actuaries - qualifications	Regulator decides who can act as the company actuary	Qualifications set by the professional association	Code of conduct enforced by the profession	Actuaries are responsible and held accountable for their own work
Actuaries - standards of professional practice	Set by the regulator	Most aspects are defined by the profession	Fully defined by the profession but a wide range of choice is available, limited discipline	Fully defined with a narrow range of choice and enforced discipline to use standards

Accountants - number	More companies than accountants	Large companies have their own accountants	Most companies have their own accountants	Companies have well qualified accountants
Accountants - qualifications	Regulator decides on who can act as the company's accountant	Qualifications set by the profession	Code of Conduct enforced by the profession	Accountants are responsible and held accountable for their work
Accountants - standards of professional practice	Set by the Regulator	Most aspects are defined by the profession	Fully defined by the profession but a wide range of practice is possible, limited professional discipline	Fully defined by the profession and a narrow range of choice is available, tight discipline and enforcement
Auditors - number	Few available to do the work and remain independent	Few but strong recruiting and training of new auditors	Sufficient to allow choice but limited flexibility to change auditor	Sufficient to allow lots of choice and flexibility to change auditor regularly
Auditors - qualifications	Regulator decides who can act as the company auditor	Qualifications set by the professional association	Code of conduct enforced by the profession	Auditors are responsible and held accountable for their own work
Auditors - standards of professional practice	Set by the Regulator	Most aspects are defined by the profession	Fully defined by the profession but a wide range of practice is possible, limited professional discipline	Fully defined by the profession and a narrow range of choice is available, tight discipline and enforcement
Industry Associations	Primarily focused on lobbying for the industry	Set selected standards of behavior for companies to	Comprehensive standards but weak enforcement	Comprehensive standards with strong enforcement

		follow	powers	and discipline powers
No-executive members of the Boards of Directors	Few independent directors required	Independent directors are required but have no special role	Independent directors have role in selected committees of the board	Independent directors have clear responsibility and accountability
Ownership of financial institutions	Primarily closely held domestic institutions	Big domestic institutions are widely held. All are publicly owned	Most domestic institutions are widely held and internationally active	All domestic institutions are widely held
Corporate Governance for companies	Weak internal controls and compliance assessment process	Company policy required in selected areas	Comprehensive range of company policies are required	Comprehensive range of policies with close monitoring and remedial programs in companies
Judiciary System	Inconsistent or untried interpretations	Weak public confidence in the fairness of the courts	Strong public confidence in the courts	Strong public confidence and the courts have experience in interpreting financial sector legislation
Liquidation legislation	No clear legislation to deal with insolvent financial services providers.	Weak and untested legislation to deal with liquidations of financial services companies	Untested but strong legislation to deal with financial services liquidations	Legislation to handle liquidations is strong and has been tested to be effective
Policyholder Protection arrangements	There is none	One exists but it is not understood or widely known	One exists but its readiness and effectiveness is questioned	One exists and its readiness and effectiveness is understood
Banking system - Personal	Some personal savings is held	Most personal savings are in	Personal savings is in	Personal savings are in

	in banks, public confidence is weak	banks	banks and confidence is strong	variety of regulated and unregulated financial products
Banking system - corporate	Small and weak domestic activity	Small but the primary sources of commercial lending	Large and the primary sources of commercial lending	Commercial lending is performed by a variety of regulated and unregulated entities
Banking system - Investment	Small and weak domestic activity			Major activity for banks
Capital Markets system	Low market capitalization and low market activity	Modest capital market, but not seen as the primary source of financing	Large capital market but banks and insurers dominate financing	Active capital markets and primary source of financing for listed companies
Supervision - political influence	Most significant decisions require approval of elected officials	Most significant decisions are made by the supervisor but funding is a part of the government budget system	Supervisory agency can make independent supervisory decisions but its budget is linked to government budgets	Supervisory agency is independent to make decisions and is funded separate from other government activities
Supervision - corporate governance of the agency	Supervisory role is a part of a government department	Supervisory agency is separate from other government departments		Supervisory agency is independent of government and has a board
Supervision - product control	Supervisor sets or approves product design and pricing	Products are filed with the supervisory and some terms and conditions are prescribed	Products are filed with the supervisor	Companies are free to design and price products freely without notice or filing
Supervision - process for valuing assets	Supervisor sets or approves values assigned	Some asset values are set by GAAP but	Value of assets are for the most part set by	Value of assets are determined using GAAP

	to assets	most are prescribed	GAAP and some are set by regulation	
Supervision - process for valuing liabilities	Supervisor sets the methods and assumptions for valuing liabilities	Assumptions and methods vary from the prescribed model to reflect company differences with the approval of the supervisor	Assumptions and methods reflect differences in company risk exposures but are approved by the supervisor	Methods and assumptions for valuing assets are set by the standards of practice for actuaries
Supervision - required capital approach	Supervisor sets an easy to apply and easy to test required capital formula	Comprehensive capital model that varies by category of asset and liability	Simplified risk based capital model with broad risk categories	Dynamic risk based capital model that reflects different net risk exposures
Supervision - analysis and on-site approach	Supervisor carries out an audit to ensure that companies follow the legislated and other rules	Supervisor carries out sample based audit and tests at a detail level certain areas of risk	Supervisory process is built on a risk based analysis and on-site model	Focus of the supervisory process in on testing the confidence that the supervisor has on relying on the work of others

The alignment of the technical infrastructure against the supervisory approach is achieved by comparing the consistency of the match between the indicators set out in the table above against the classification of the supervisory approach. That is, the technical infrastructure may indicate that a greater degree of reliance on the work of others is possible than the supervisory approach allows.

Once again the mismatch may not create a problem for the supervisor but understanding the areas where these mismatches occur could assist the supervisor in building an effective supervisory agency.

Risks to Which Insurance Companies are Exposed

The risks that affect the value of the assets of the company vary by the type of assets held by the company and are similar to the risks that affect the asset values of any financial institution. The assets of the company are for the most part investments that are

held to support the liabilities and other obligations of the company. The risks that affect assets are primarily associated with the risk that the values at which these assets are reported decline below the current reported value, and include:

Credit Risk – the risk that the value of an invested asset will decline as a result of the borrower becoming unable to meet repayment commitments in full as they fall due.

- This could cause the asset to be written down or restructured
- This could also involve counter-party risk

Asset Default – the risk that the value of an asset is reduced to the value of the collateral (net of collection expenses) that was pledged by the borrower as a result of the borrower becoming unable to make any current or future repayments under the loan.

Market Decline Risk – the risk that the value of an asset is reduced as a result of a decline in the market value of the asset.

- This could cause the asset value to go down below the value at which the asset is currently held on the books of the company.

Market Risk – the risk that assets that are exposed to volatile price variations cease to be immunized as a result of changes in market conditions.

Concentration Risk – the risk that the assets of the company are invested in too narrow a range of the available choices of investment instrument, industry, geographic distribution, currency, etc. This could be harmful if the asset value declines and in so doing significantly reduces the capital of the company.

The risks that affect the value of the liabilities of an insurance company are in many respects unique to the insurance business. However, some of the risks are similar to those to which any financial institution is exposed. The risks are primarily associated with the risk that the value at which the liabilities are reported is insufficient to meet future commitments to policyholders and their beneficiaries. These risks include:

Insured Benefit Risk – the risk that the future claims experience is in excess of the level of claims that was expected when the premiums were developed.

- This could be a result of changes in the characteristics of the risk so that past experience is not a reasonable indicator of the level of claims to be expected in the future.
- This could result from changes in the economic environment that affect claims experience adversely
- For life insurance companies these include primarily mortality and morbidity risk.
- For general insurance companies these include auto, fire, earthquake, flood, homeowners, liability, surety, theft, etc.

Premium Pricing Risk – the risk that premiums prove to be inadequate due to errors in judgment as to the level of claims or expenses during the period for which insurance is provided.

- This could be a result of reducing prices below the economic value of the insurance in response to pressure from competitors in the market.
- This could result from aggressive product design features that are not adequately provided for in the premium setting process.

Underwriting Risk – the risk that classification of the risk at the outset of the coverage is inappropriate in relation to the premium or contract terms

- This could result in the company accepting risks that should have been declined or for which alternate coverage should have been offered.
- It could result in the company accepting risks for which it is not adequately prepared in terms of experience or the skills of the staff.

Catastrophe Risk – the risk that very rare events happen and result in an abnormal level of claims affecting a broad range of customers at the same time.

- This could be a result of a storm, earthquake or epidemic

Market Risk – the risk that liabilities that are exposed to volatile price variations cease to be immunized as a result of changes in market conditions.

- This could result from securitization activities in derivative financial instruments involving the liabilities of the company.

Legal Risk – the risk that the interpretation of contracts of insurance extends the scope of the risks that are covered by the contracts beyond those intended by the insurance company.

Concentration Risk – the risk that the customer base of the company is too narrowly focused in terms of a range of insurance risks offered, insured amount, geographic distribution, etc.

- This affects the ability of the company to diversify its risks and reduces the effectiveness of the use of the law of large numbers.

The risks that affect the value of capital and surplus of the company are similar to the risks that affect these values for any financial institution. These risks affect the value of any existing capital and surplus and therefore consider the sources of capital and surplus and the potential for those sources to be reliable sources in the future. In that context the risks acting against capital and surplus include:

Increased Cost of Capital – the risk that the cost of issuing new capital instruments in the market, or privately, will be more costly or only be available with more conditions in the future.

Reduced Capital Availability – the risk that sources of capital that the company enjoyed in the past will not be available in the future.

Reduced Earnings – the risk that the profitability of the company declines and in so doing reduces the availability of retained earnings as a reliable source of capital in the future.

Accounting Reliability – the risk that the financial report that the company prepares is not an accurate representation of its financial position.

Accounting Inconsistency – the risk that because of the range and variation in accounting and financial reporting practices that the company is required to meet, the company fails an important measure and is unable to meet the test in the short term.

There are risks that affect the interaction of variations in the way that assets and liabilities are valued. These are generally a result of a mismatch in the way these instruments behave as market conditions change. These affect both the value of assets and the value assigned to liabilities with a net affect on the capital and surplus of the company. These include:

Mismatch Risk – the risk that cash flows emerging from the invested assets of the company are insufficient to meet the company’s financial obligations.

- This could be because of a conscious decision by the company to take a market position with the potential for improved investment performance.
- This could develop as a result of changes in the market conditions and the value of assets move in a contrary direction to the movement in the value of the liabilities.

Liquidity Risk – the risk that the demand for cash payments from the company exceeds the cash, or near cash, resources of the company.

- This could result in the company being forced to sell assets at less than the true market value to generate the cash needed to meet its’ commitments.

Interest Rate Risk - the risk that interest rates change in the future in a direction, or to a degree, that forces recognition of an increase in the value of liabilities over assets.

- This could be a result of a shift in the yield curve that accentuates a mismatch position
- This could cause guarantees that are imbedded in contract of insurance to become more valuable than was expected or planned.

Management Risk – the risk that the management of the company lacks the skills, experience or knowledge of the industry necessary to manage the company effectively and to protect the rights of policyholders.

Technology Risk – the risk that the company’s use of, or dependence on technology exposes the company to a high level of risk.

Operational Risk – the risk that an event occurs, or a situation emerges, that is not covered by any of the specifically identified risks and creates a material financial loss.

- This could be a result of weak management or errors in judgment.
- This could include administrative problems or errors.

Risk Management and Risk Mitigation Tools

There are several categories of techniques for management of risk and these are often referred to as risk mitigation techniques. These range from rules that limit what business can be done and how it is carried out to complex and elegant techniques that are applied at the company level. These controls and techniques will be grouped and discussed briefly so that the reader can get a basic understanding of each. These include to controls that are placed on insurance companies by legislation, regulation and regulatory guidelines, industry practices, company practices and each has an element that requires a certain level of knowledge and skill on the part of the party that applies the techniques. This section will review these in turn

Risk mitigation is the process of managing a risk so that the impact of adverse events becomes predictable and the range of possible adverse experience is limited to acceptable ranges. One can expect that the effect of using risk mitigation techniques is to reduce the volatility and instability of risk and replace it with greater stability and predictability. The risks therefore, do not disappear as a result of using these techniques they merely become manageable.

These risk management or risk mitigation techniques are tools that companies can use to reduce the volatility and the negative financial effect of adverse exposure to risk. The intent of using these techniques is to make the net exposure to risk more consistent and predictable so the company has the highest probability of continuing to meet its obligations to policyholders as possible.

Prudential application of these techniques reduces the net exposure to risk and hence reduces the capital that a company might otherwise be required to maintain.

Legislation

Legislation is often used to limit the risks to which insurance companies can be exposed. Obviously these could take the form of a prohibition for insurance companies to be involved in certain activities. These in part define the insurance business in the jurisdiction but they also limit the risks that insurance companies can accept. An

example of this is the need in several jurisdictions for companies to be licensed, or have its' license endorsed, for each class of insurance. This allows the insurance supervisor to assess the skills and knowledge of the company to deal with each class.

Legislation could also prescribe limits within which the company must operate. In several jurisdictions this takes the form of investment limits that are set out in the legislation.

In situations where legislation prohibits certain activities the effect could be to minimize or eliminate the risk to which a company might otherwise be exposed. Prescriptive legislation could reduce or minimize the risk so that the net exposure to risk is well within a level of stable expected experience.

Regulations

Legislation often gives the regulator the authority to prepare regulations that set limits or controls on the operations of insurance companies. This approach has the same effect as though the legislation set out the details of the limitation from a risk mitigation point of view. However, by setting out these matters in regulations more detail can be defined and the regime can be more flexible. It is often easier and faster for the supervisor to get changes the regulations than it is to seek changes legislation.

So, by delegating regulation-making authority to the supervisor, the regime can be kept up-to-date. Regulations are able to contain far more detail than would normally be included in legislation. This means that the supervisor can include far more technical details in the regulations than would be appropriate in legislation. As financial products and services change to meet market conditions, the supervisor can change the regulations to meet market conditions.

Some of these techniques have been in use in many supervisory regimes around the world for many years. These techniques all have the effect of putting a limit on the amount of risk to which a company can be exposed in a specific aspect of its business operations. These limits apply to all companies that operate in the market.

In most major insurance markets the insurance supervisor has imposed constraints on the operations of insurance companies so as to limit the risks to which insurance companies can be exposed. Even though these regulations have the effect of managing or limiting the company's exposure to risk, unless the limitations are significant there will still be a significant net exposure to risk and therefore a need for capital. Only in situations where these regulations are significant can they fully mitigate the risks that they are addressing.

Investment regulations – these limit the range or investments that insurance companies can use. They also limit the level of risk that insurance companies are permitted to take in making investment decisions. These limits could restrict

companies to investing in only top quality marketable assets. This has the effect of limiting the credit risk and default risk to which insurance companies might be exposed. This also has the effect of imposing a degree of conservatism in the activities of insurance companies.

Prescribed statutory bases for valuing liabilities – the practice of using statutory bases for calculating the value of the liabilities of a company has been in place for many years in many jurisdictions as an effective way to control the risks on the liability side of the balance sheet and to add margins for adverse deviations in experience. Typically the bases chosen cover the broad generality of risk exposures and so can be thought to cover the most risky enterprise which by definition makes the basis more than adequate for the least risky enterprise in the jurisdiction. This technique does allow the insurance supervisor to establish explicit margins through the process of selecting the valuation assumptions and methodologies.

Reinsurance regulations – the use of reinsurance regulations can have a wide-ranging effect on the way the insurance business is carried out in a jurisdiction. These regulations exist in most jurisdictions in one form or other. The most common use for these regulations is to limit the types of reinsurance and the companies with which local insurance companies can do business and get credit for having a valid transfer of risk. The effect of these regulations however, can be far reaching.

- By limiting the range of options for choosing companies with which business is permitted the insurance supervisor is working to provide a regime under which the ultimate collectability of reinsurance is optimized.

Reinsurance may be required for insurance companies that offer certain types of insurance protection, such as earthquake insurance or catastrophe insurance. This has the effect of limiting the exposure of any one company in the industry to an acceptable level of risk without setting a specific capital requirement.

- The insurance supervisor may retain the power to review and approve reinsurance contracts to ensure that they involve valid transfers of risk and are not simply mechanisms to reduce capital. This imposes a discipline in the industry to ensure that reinsurance is carried out on a sound and appropriate basis.
- Certain type of reinsurance such as financial reinsurance, which is intended to provide smoothing of income, may not be allowed.

Premium rate regulations – these regulations can involve setting the basis for determining premiums for certain classes of business or requiring that premium rates be approved by the insurance supervisor before they are offered to the public. These have the effect of limiting the range of innovative assumptions and

methodologies that companies can use to set premiums and reduces the risk that product pricing will prove inadequate.

Policy forms regulations – the regulation of the terms and conditions that are included in the contracts of insurance work toward achieving two main objectives.

- Regulating the content and wording of insurance contracts can ensure that these are clear and unambiguous so reducing legal risk and provide customers with more confidence that companies will provide the coverage they understand to be provided by the policy.
- These regulations could also provide consistency within the range of products that are offered to the public by companies that operate in the jurisdiction.

Regulatory Guidelines

Regulatory guidelines are used in situations where the legislation or regulations give the companies the authority to set limits, internal controls that companies must establish or set out situations in which companies are required to seek the approval of the insurance supervisor. Companies often want a clear definition of what the supervisor sees as acceptable within the range of choices that companies might have. Regulatory guidelines set out the range of acceptable choice within which the companies are expected to make its' decision.

An example of this technique is the prudential investment policy approach that exists in several jurisdictions. Typically, the legislation requires that company to set investment policy that recognizes the need to achieve a balance between investing to get an attractive return and the need to invest the company's assets in a manner that provides a reasonable level of protection from adverse investment experience. In these jurisdictions, it is common for the regulator to set out the range of topics and the range of choices that need to be covered by company policy through regulatory guidelines.

Supervision of Companies as a Risk Management Tool

The skills, knowledge and experience of the staff in the insurance supervisory agency can contribute significantly as a risk mitigation tool. Timely and decisive intervention with companies that become weak will reduce the risk level for the company in particular and the industry in general. For this to be effective, the supervisory authority must have a clear mandate to act early, to act promptly and decisively.

In the same sense as a board of directors provides an oversight function for the sound operation of a company, the insurance supervisor provides an oversight function for the sound operation of the industry. Boards need a clear definition of what they are

responsible for and so do regulators so that both parties understand what is expected of the board of directors.

The industry has to understand the expectation of the regulatory regime and the insurance supervisor and know that the rules will be enforced in an even-handed manner. In this way companies will expect to be treated fairly but firmly if the financial affairs of the company reach a state where policyholder benefits are at risk.

Role of capital adequacy testing – capital adequacy testing used on a regular basis with reporting to the insurance supervisor can provide a level of comfort to the insurance supervisor that the companies that operate in the jurisdiction have sufficient capital, together with adequate capital plans, to meet all reasonable scenarios. This will have the effect of reducing the margin that insurance supervisors might otherwise want to have companies retain. This margin may otherwise be established in the capital requirements to provide for an unexpected deviation in experience.

Industry Standards of Practice

In some jurisdictions the regulator and/or the insurance industry has defined standards of sound business practice. These can define a wide range of activities of an insurance company and be written to cover the diversity of the market. Although these do not have the force of law, they do exert substantial moral suasion pressure on companies to meet the standards that the industry set for itself.

These standards can limit the risks and define standards of risk management that would be expected of a well-managed company. The regulator can assess the degree of compliance that each company has against these standards and encourage or require improvements.

In other cases the industry has established a risk management technique by working together to establish a risk management tool that they all use. This could range from policy wording to industry risk pooling arrangements.

Clear and Unambiguous Contract Wording – contracts of insurance are legal contract that are written by an insurer under which the customer has no option to alter the wording of the agreement. As a result, policies that clearly set out the conditions under which the insurance benefits would be paid lead to less confusion and conflict with the customer. If a dispute dealing with the interpretation of a contract is referred to a court for resolution, the contract may be interpreted in favor of the claimant if the contract wording is ambiguous. Insurers can control this risk exposure by wording contracts of insurance clearly and by using common terminology wherever possible.

Pooling of Risks – this is a practice under which insurers create a common pool for managing special risks or for creating a large group of insurance risk so the law of large numbers can be applied effectively.

- This type of arrangement is common for general insurance companies that write automobile insurance to provide insurance for high-risk drivers who are required to have insurance to drive but insurance companies would rather not provide insurance to this class of risk, so managing these risks as a separate pool helps manage the risk and allows these people to get the insurance they need.

Company Standards

Each company should have in place policies and procedures that manage or limit the risks to which it is exposed. Some of these are unique to the company and others are applied in a company specific way but are built on industry practices. These are necessary for the company to ensure that the risks that it accepts, the risk mitigation techniques that are used and the net risk exposure are all within the target risk tolerance of the company. Without clear policy statements in this area, companies could discover that it is exposed to risks that could impair its ability to continue to operate as a sound long-term business.

The insurance industry has a long tradition of using a range of risk management tools to limit or control the risks that a company accepts, to control the risks to which a company is exposed, to immunize the company from adverse experience and to manage the net risk exposure over time. Some of these techniques have been in use for many years and were developed before sophisticated computer modeling techniques were available. Other techniques require elegant computer models to be effective management tools.

Reinsurance – this is one of the fundamental mechanisms in use by the industry to pass a portion or all of a risk from one insurer to another. There is a wide range of reinsurance arrangements in use, but they have one basic characteristic in common. The insurance company identifies a risk that it wishes to control and passes it on to a reinsurer in exchange for a premium or series of premiums.

Under reinsurance contracts, the insurer pays any valid claims that may arise under the insurance contract and then files a claim with the reinsurer to recover its insured losses. This means that if the reinsurer denies that it has full liability for the reinsured portion, the insurer is left with payment of the amount of the claim. This means that insurance companies should consider the ultimate collectability of reinsurance that it has in place.

Reinsurance can be entered into at the point an insurance risk is issued to a customer under a variety of commercial agreements between companies.

Alternatively an insurer can enter into a block reinsurance transaction to reduce its risk exposure and by so doing reduce its reported liabilities. Reinsurance arrangements can also cover specific insurance coverage risks but cover a class of risk rather than cover the risk associated with a specific contract of insurance, excess loss risks, catastrophic losses, etc.

Financial reinsurance is a variation on the general principles of reinsurance under which reinsurance spreads the cost of insurance claims over several financial reporting periods. The smoothing effect that this type of arrangement has can be attractive to companies but statutory reporting and GAAP accounting does not always recognize this type of arrangement as being valid reinsurance.

Exclusionary Clauses – the use of exclusions in the policy of insurance is a common way to limit the risk to which the insurer is exposed.

- These clauses could limit the events or causes of loss that would generate a claim payment and by so doing reduce the ultimate claims cost and limit the scope for anti-selection.
- These clauses could limit the amount that the company would pay in the event of a claim to the losses that are incurred by the insured subject up to a maximum coverage provided under the policy of insurance.

Diversification – this technique is used to reduce concentration risk that may exist on the asset or the liabilities side of the balance sheet.

- Asset diversification is produced through the use of a range of different types of investment instruments, with investments in a variety of industries and different geographical areas of the market in which the company operates.
- Liability diversification is produced through offering a range of forms of insurance to the market and limiting the exposure to a single customer, industry or geographic area.

Use of Financial Models – this technique allows the company to actively manage the risks to which it is exposed by using computer models to measure and track the risks that it has accepted and to assess the effectiveness of the instruments that it has acquired to immunize those risks. The use of financial models requires sophisticated computer models and generally is most effective when linked closely to the risk management processes that the company has in place to measure and protect the company from the effect of undue risk.

Underwriting – this is a fundamental risk assessment tool that is applied at the point an application for insurance is considered by the insurer. The underwriter assesses the risk involved in the application and determines the appropriate risk classification for the coverage that is requested and the premium to be charged for the risk. The underwriter would also consider how much of the insurance risk the company should retain itself and how much should be reinsured.

Claims Adjudication Processes – the process used and the staffing in place to consider, manage and pay claims must be linked to the underwriting process as well as the wording of the contracts of insurance. Identifying, and limiting the payment of claims to valid claims is an important part of managing the ultimate cost of providing insurance to customers.

Securitization – this technique can be applied to assets as well as liabilities. It involves the packaging of a group of similar risks into a pool and designing a derivative instrument to pass on this risk to potential investors. This can be used to reduce the exposure of a company to a high concentration of mortgages, to cover high levels of losses from catastrophic events beyond that provided by conventional reinsurance arrangements, etc.

Immunization – this is a technique to purchase specific financial instruments to offset particular risks that are on the books of the company. This could involve the use of currency derivatives to offset a net exposure in a foreign currency or interest rate derivative instruments to cover a mismatch position between the average duration of assets and liabilities.

Other Risk Mitigation Techniques

Insurance supervisors have other techniques available to them for limiting or managing the more significant risks associated with the insurance business. The insurance supervisors may choose these techniques in jurisdictions in which the supervisor forms the view that the adoption of these alternative techniques are needed to substantially reduce the risks to which the industry is exposed or to provide adequate protection for policyholders. In other jurisdictions, these techniques would be used as complementary risk mitigation.

Each of these techniques has the effect of limiting the amount of risk to which an insurance company is exposed. In situations where these techniques are in place, recognition should be given in the supervisory framework for the reduction in risk that is achieved. In some circumstances the rules may be such that some risks are sufficiently reduced that the net exposure is at acceptably low levels.

Policyholder guarantee funds – policyholder guarantee funds provide a level of financial guarantee insurance to policyholders of insolvent insurance companies. These arrangements include the same sort of exclusions and limits on coverage that one would expect of a commercially available insurance contract. These arrangements can provide the insurance supervisor with an added level of comfort that policyholders will be adequately compensated in the event of a failure of a company that is a member of the guarantee fund.

- Note: In dealing with a problem company, the insurance supervisor should act firmly and promptly, as though the guarantee fund does not exist, but the

supervisory authority should recognize that the guarantee fund does provide added protection for policyholders.

In the event that the insurance guarantee fund is financed by the insurance industry, it can be expected that the supervisor will be pressured to deal with problem companies early so that the cost of managing the resolution of the company can be minimized. In addition, since the cost of the resolution of a problem company would be shared by the industry participants, it may be more difficult for the supervisor to find a company that would be willing to take on the problem company as part of its operation, since in so doing it would finance the resolution itself. This result may be at odds with the expectation of the legislators

Supervisory Methodology

The risk-based supervisory methodology considers each major area of the company's operation and looks at the risks within each specific area. The process of selecting the areas of the company to review is intended to look at small enough units within the company that the risks within that unit can be reviewed and assessed. By considering both lines of business and operational units the intent is to look at critical risk areas from different points of view.

In this way the examiner is assisted in locating the most vulnerable area of the company and the processes that the company uses to manage that risk exposure.

In addition, by taking a structured approach, the key areas of the company's operation can be identified across the industry so that consistency of information is collected. This will facilitate identifying the good practices within the industry so that the standard of risk management that companies use can be improved over time.

For each major area within the company the supervisor then considers all of the risks that could be problematic and assesses the risk management approaches and their effectiveness. The conclusion of each such review should include an assessment of whether the risk is increasing, stable or in reducing in significance and whether the net risk exposure is high, medium or low in terms of the impact of the financial results of the company.

Having identified the areas of risk to which insurance companies are exposed the supervisor should identify the data or information that should be collected from each company to determine the gross and net risk exposure for the most significant risks. As has been said, the process is intended to focus supervisory attention to the financial risks that present a significant chance of impairing the financial condition of the company. Since these are financial risks they may form a part of the financial reporting requirements for the country. Some of the information that the supervisor requires will need to be updated each year, in which case it may be appropriate to have this information as part of the annual regulatory filing form the company. Other information

may be relatively consistent from year to year, in which this information can be collected when and if it is required.

For the most part the gross financial exposure to risk should be identifiable and followed using the financial statements that are routinely prepared and filed with the regulator. The information as to the structure of the company and its areas of operation should be a part of the information that the supervisor has on file. If not that information will have to be collected from the company to support this process. In most cases the information that is required to assess the degree to which risk mitigation techniques control these risks will require special, company specific information or reports. This latter information could be required each year or it could be filed only when internal processes change in a company.

The supervisor will require special skills to study the areas of risk, the risk mitigation techniques and their effectiveness in controlling the volatility and net exposure to risk.

Having identified the risks for which the supervisor has the greatest concern, the next step is to carry out a detailed in depth review of the way the company controls the risks. The intent of any risk mitigation technique is generally to change what might be large, volatile risk into one that is stable, predictable and financially manageable.

Here again, it is common for the supervisor to use specialist skills to assess the effectiveness of the risk mitigation processes that a company might use.

When the review process is completed, it is common practice for supervisors to report back to the company on the results of the review and to make recommendations for change. The risk based supervisory methodology lend itself well to this process because of the depth that the supervisory review will have taken on a key risk area within the company. So the report can add value to the company by recommending improvements to strengthen the financial position of the company. This report would identify areas that can be strengthened by the company to better mitigate the risks and generally strengthen the company's internal control processes. Here again the use of specialist who is able to discuss the risks and the risk management processes with the management of the company.

Summary

Risk based supervision is a structured approach to identify the key risks to which the industry and individual companies are exposed, to assess the risk mitigation techniques that are used to manage these risks, to assess the net risk exposure that emerges in terms of its level and volatility and then to focus the supervisory effort on the most significant of these net risk exposures. The basic objective of the process is to identify as efficiently as possible the areas of the company's operation that present the greatest financial risk to its continued viability.

All supervisory processes have an element of this risk-based approach since no supervisor can look at all of the details for each company. Rather, one often uses techniques to identify the most risky aspects of a companies operation and then carries out an in depth review of those areas. The risk-based approach provides a discipline for identifying these areas of risk that deserve supervisory attention and could require remediation within the companies.

By establishing a disciplined supervisory process for considering the key risks and focusing supervisory resources on those issues, the process can be made more effective and more efficient.

This does not imply that the same solution or approach is appropriate for each country. The actual supervisory framework that is adopted should reflect the local technical infrastructure, culture and the stage of development of the industry itself. However, the more the supervisory framework focuses on the key areas of risk the more likely the framework will be effective and efficient in its effort to provide reasonable assurance to the public that they can have confidence that the insurance industry will pay claims when they fall due.