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CANADIAN VISION FOR PROPERTY AND CASUALTY INSURER SOLVENCY ASSESSMENT

**MCT ADVISORY COMMITTEE
QUÉBEC CHARTERED P&C INSURERS**

JULY 2011

MINIMUM CAPITAL TEST ADVISORY COMMITTEE

In January 2010, the Property & Casualty Minimum Capital Test (MCT) Advisory Committee (P&C MAC) published its *Key Principles for the Future Direction of the Canadian Regulatory Capital Framework for Property and Casualty Insurance*.

The P&C MAC is co-chaired by Chris Townsend, P&C industry representative, Chris Walton, Insurance Bureau of Canada's (IBC) Financial Affairs Committee, and Bernard Dupont, Managing Director, Insurance Capital at the Office of the Superintendent of Financial Institutions (OSFI). Its members are senior representatives from the IBC, the Canadian Institute of Actuaries (CIA), the Property and Casualty Insurance Compensation Corporation (PACICC), the Canadian Council of Insurance Regulators (CCIR), OSFI, the Autorité des marchés financiers (AMF) and representatives from the industry.

The P&C MAC is now releasing its vision for new principle-based solvency framework for Canadian P&C insurers for comments. These are outlined in the attached paper, *Canadian Vision for Property and Casualty Insurer Solvency Assessment*.

The paper calls for regulatory asset requirements to be calculated on two bases – a Target Asset Requirement (TAR) and at a minimum level the Minimum Asset Requirement (MAR).

All insurers would use the standard approach, a factor or formula based approach, to calculate the MAR. The most sophisticated method of calculating TAR would be the internal model approach which uses models integrated with the insurer's risk management system. The internal model approach will be made available only to those insurers that can demonstrate that they have robust controls in place and that they meet minimum standards set by the regulators. Certain aspects of the framework remain to be finalized, for example the use of a Value at Risk (VaR) or a Tail Value at Risk (TVaR) risk measure.

While a definitive timetable has yet to be approved, the implementation of the new solvency framework should be done gradually starting with the measure for insurance risk for regulatory capital purposes expected by 2014-2015. The development of models to measure the other risks will follow thereafter.

The AMF is now releasing for comments a version of the vision, as developed and proposed by the P&C MAC in "Canadian Vision for Property & Casualty Insurer Solvency Assessment", which is consistent with the AMF regulatory framework. Financial institutions and interested persons in submitting their comments are invited to provide them no later than October 15, 2011. It should be noted that comments submitted might be made public unless otherwise noted.

Request for comments

Comments must be made to the following:

Me Anne-Marie Beaudoin
Director, Secretariat
Autorité des marchés financiers
800, square Victoria, 22^e étage
C.P. 246, tour de la Bourse
Montréal (Québec) H4Z 1G3
Fax : 514.864.6381
E-mail : consultation-en-cours@lautorite.qc.ca

Further information

Further information is available from:

M. Claude La Rochelle
Standards and Deposit Insurance section
Autorité des marchés financiers
Telephone : (418) 525-0337, ext. 4513
Toll free : 1 877 525-0337, ext. 4513
E-mail: claudelaroche@lautorite.qc.ca

**CANADIAN VISION FOR
PROPERTY AND CASUALTY INSURER
SOLVENCY ASSESSMENT**

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Vision

This paper has been prepared by the Property & Casualty Minimum Capital Test (MCT) Advisory Committee (P&C MAC) to outline a vision for new principles-based solvency financial requirements for Canadian P&C insurers. The paper is consistent with the Canadian vision for life insurers paper posted on OSFI and the AMF websites on November 2007. These requirements are intended to encourage the use of improved risk-based business decisions and better reflect each company's risk profile and risk management practices.

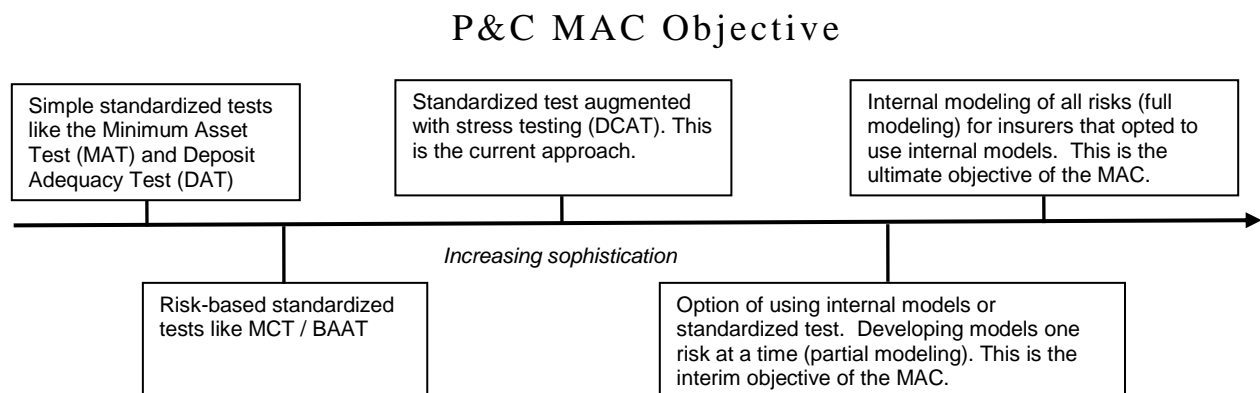
Key stakeholders in the Canadian P&C insurance industry are working together through the P&C MAC to:

- build consensus on the direction the new capital adequacy regime will take;
- establish priorities and timing;
- review and provide expert feedback on criteria developed by the regulators;
- recommend elements of a new internal models capital framework to the regulators.

The P&C MAC is co-chaired by representatives of the industry and a representative of the Office of the Superintendent of Financial Institutions (OSFI). Its members are senior representatives from the Insurance Bureau of Canada (IBC), the Canadian Institute of Actuaries (CIA), the Property and Casualty Insurance Compensation Corporation (PACICC), the Autorité des marchés financiers (AMF), OSFI and the Canadian Council of Insurance Regulators (CCIR), as well as representatives from insurance and reinsurance industries.

Objective

The P&C MAC objective is to develop more risk sensitive capital rules that recognize improvements in risk management. This new framework would provide insurers that met minimum management and governance criteria for the use of internal models with the option of using internal models or continue using a standardized approach (like the current Minimum Capital Test (MCT) and Branch Adequacy of Assets Test (BAAT)) for regulatory capital purposes. The expectation is that over time, insurers that opted to embark in the use of internal models for one risk (partial modeling) will continue developing models for the other risks (full modeling).



Reason for Change

Leading insurers are moving toward internal capital models for internal risk management, capital management, regulatory reporting requirements and rating agency assessments. The P&C MAC believes it is important to support these developments in risk management as all stakeholders benefit from a better determination and allocation of capital to risk. The P&C MAC has therefore developed this vision of P&C insurers' solvency assessments for Canada.

Core Concepts

The P&C MAC proposes that the future Canadian P&C insurer's solvency framework should:

- provide insurers the option to use a standardized test (like the MCT/BAAT) or with regulator approval, the use of internal models (when insurers opt for using internal models for one risk, there is an expectation that models will be developed for the other risks);
- take into account all risks including insurance, credit, market, liquidity and operational risks;
- model each risk separately; the total capital requirement for all risks combined should be determined by adding the results of the separate capital requirements for insurance risk, credit risk, market risk, and operational risk, or by determining a total asset requirement for all such risks and deducting an amount representing liabilities (it will be determined later which methodology is selected);
- recognize all of the cash flows from all assets and liabilities (including derivatives);
- value the cash flows consistently and realistically;
- reflect effective risk mitigation strategies used by the insurer;
- consider the dependencies within risks and between risks and recognize when appropriate and measurable; note that we believe it is difficult to appropriately measure at this time the correlation between risks in stress situations, so there will be no diversification between risk categories initially;
- ensure that insurer assets are sufficient, with a high degree of confidence, to withstand adversity emerging over a defined regulatory control time horizon (e.g. might be deemed to be one year);
- consider the winding-up and restructuring costs when appropriate;
- ensure that there are sufficient assets at the end of the defined time horizon to provide for the:
 - transfer of the remaining obligations to another insurer or;
 - run-off of the remaining obligations.

These core concepts of the vision result in a regulatory asset requirement which delivers a realistic view of the financial position of an insurer.

Sound governance and market conduct, supported by effective reporting and disclosure, are of key importance to ensure an effective solvency framework and are the basis for supervisory

assessment of the ability and accountability of an insurer in operating effective risk management. Sufficient skilled and competent resources dedicated to the modeling function are a prerequisite of an internal capital model approach.

Regulators will establish standards for the approval and use of internal models, including but not limited to:

- appropriateness of model;
- risk management and control standards;
- data quality;
- extent to which model is used to run the business (use test);
- minimum quantitative standards.

Refer to Appendix 2 for more information regarding governance and market conduct.

This principles-based solvency framework is not dependent on the current Canadian financial reporting regime and will apply regardless of the ultimate direction of Canadian accounting standards.

Regulatory Target and Minimum Requirements

The regulators will maintain a standardized test like the current Minimum Capital Test (MCT) and Branch Adequacy of Assets Test (BAAT) for insurers that choose not to or are unable to develop internal models. These tests may need to be adjusted once experience from the more advanced approaches is available to maintain the industry's competitive balance.

Those insurers that choose to develop models will calculate their regulatory asset requirement on two bases, at a target level (i.e., regulatory target asset requirement or TAR) and at a minimum level (i.e., regulatory minimum asset requirement or MAR).

The MAR is the level at which the regulator is expected to take control of the insurer or to take other appropriate action. Of course, the regulator is not precluded from earlier intervention if, in the judgment of the regulator, such action is warranted. The MAR will be determined according to the same core principles as the standard approach TAR (note that, even for internal models users, MAR will also use the standardized approach).

Under a TAR approach, required capital will be the amount remaining when the liabilities are deducted from the respective asset requirement. The amount of liabilities that can offset required assets, whether at the minimum, supervisory target or company target levels and whether under the standard or the internal models approach, will be capped by an amount that is linked to the calculation of required assets. The cap will be defined by the regulators.

The cap will be defined in a way that encourages companies to set liabilities at prudent levels and have appropriate levels of capital and it is expected that the cap would be reached on an exceptional basis only.

Capital and capital ratios will continue to be used in the supervisory process to assess a company's solvency and make decisions on the appropriate level of intervention.

Regulators will set the TAR at a high confidence level representative of a threshold for good quality investment grade securities¹. As its working hypothesis, the P&C MAC is using, over a 1 year horizon, either a Value at Risk (VaR) with a confidence level of 99.5% or a Tail Value at Risk (TVaR) with a confidence level of 99%. That confidence level at which the risk measure is to be applied will be confirmed at a later date following future calibration and will be finalized in a way that ensures the resulting capital and asset levels are appropriate overall, as well as for individual risks and products.

Insurers will likely choose to manage their business to higher levels of confidence than TAR to achieve strength levels desired by their stakeholders.

For a company with approval to use internal models, the supervisory target capital requirement will not be expected to decrease by an amount greater than a regulator-defined level.

Internal model and Standard Approaches

The most sophisticated method of calculating the TAR is the internal model approach which uses scenario modeling integrated with the insurer's risk management process. The internal model approach requires the modeling of an insurer's risks including the risk mitigation strategies (i.e. the manner in which the risks are managed) used by the insurer and the risk dependencies (e.g. the manner in which different types of risks interact with each other) within, as well as between, the insurer's key risk types under normal and stress situations. Dependencies between risks will be included only to the extent that they can be evaluated in a robust manner.

The regulators expect senior management and risk officers of companies with approval to use an internal model to determine regulatory capital requirements to understand and manage the underlying risk, ensure the ongoing integrity of the model and be proactive in the management of capital.

The internal model approach should be developed, subject to insurers meeting regulatory defined parameters for the various risk categories, with freedom to choose some but not necessarily all model inputs, and with both quantitative and qualitative conditions around the inputs. Generally, standardized assumptions should be used where they are not dependent on company-specific circumstances.

While the internal model approach is sophisticated, its results must be understandable and verifiable. The use of the internal model approach to determine TAR requires prior regulatory approval. The internal model approach will be made available only to those insurers that can demonstrate that they have robust controls in place and that they meet minimum standards set by the regulators.

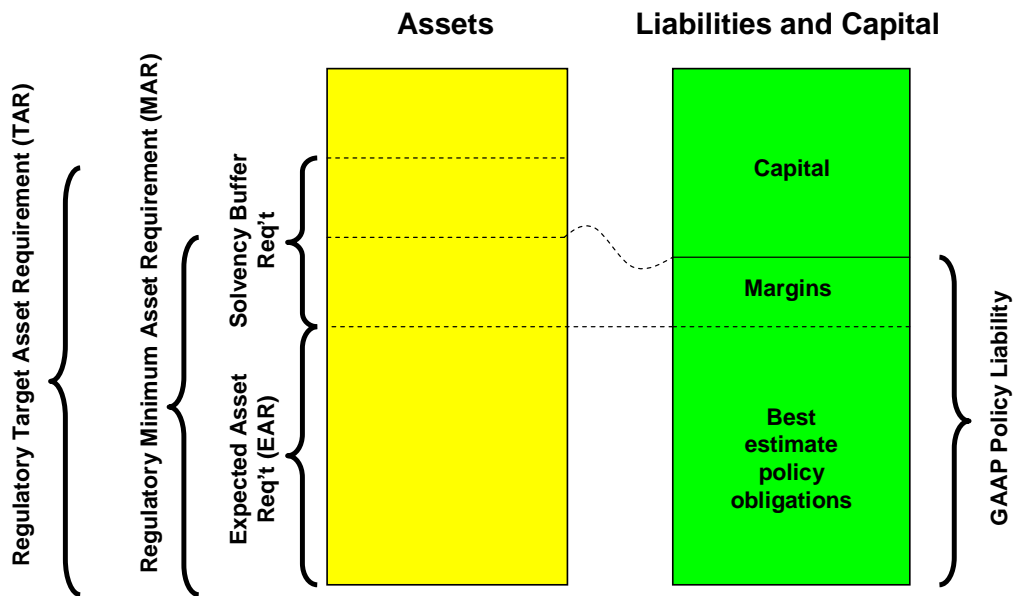
¹ The target investment grade level of quality will be determined later.

Many insurers will determine their regulatory TAR using the standard approach. While the standard approach (a formulaic or factor based method) is not as sophisticated as the internal model approach, the standard approach will reflect the key risks, risk mitigation strategies and risk dependencies. However, the standard approach will be designed to produce an appropriate requirement across the industry. Its design will also reflect, when appropriate, lessons learned from work done by the CIA and insurers using an internal modeling framework.

The standard approach, as used for TAR, will also be used as the basic framework by all insurers for the MAR. The MAR might be derived by applying simple adjustments to the TAR standard approach to reflect an appropriate lower sufficiency level.

Like the internal model approach, the standard approach needs to be understandable and verifiable. However, due to the important role of the MAR in intervention, the standard approach must also be specific, clear and not open to interpretation.

The following pictures and charts summarize the P&C MAC vision.



Comparison of Minimum and Target Asset Requirements		
	Minimum Asset Requirement (MAR)	Target Asset Requirement (TAR)
Purpose	Determines the point at which the regulator takes control or other appropriate action	Going concern level of assets that regulator expects an insurer to maintain as a minimum
Standard vs. Internal model	Standard only	Standard or internal model
Sufficiency Level	To be determined	99.5% VaR or 99% TVaR over 1 yr horizon + terminal provision ²

Comparison of Internal model and Standard Approaches		
	Internal model	Standard
Type	Internal model based on multiple scenario tests and/or stochastic approaches using company specific assumptions (where appropriate) and data	Formula or factor based calculation using industry assumptions and applied to company specific data
Risks	All risks explicitly and appropriately modeled	All risks recognized implicitly or explicitly in formulation of standard approach and appropriately modeled
Application	Selection of internal model vs standard approach may be made for credit, market, insurance and operational risk separately	Selection of internal model vs standard approach may be made for credit, market, insurance and operational risk separately
Risk Mitigation	Risk mitigation modeled	Key types of mitigation recognized implicitly or explicitly
Risk Dependencies (e.g. correlation, concentration)	Risk dependencies within and between risks are modeled when appropriate and measurable	Partial recognition of dependencies within key risks
Confidence Level	99.5% VaR or 99% TVaR over 1 yr horizon + terminal provision ²	99.5% VaR or 99% TVaR over 1 yr horizon + terminal provision ²
Calibration	Calibrated according to internal model standards established by actuarial profession and regulator in consultation with the industry	Periodically calibrated by the regulator in consultation with the industry and with reference to the internal models filed with the regulator
Results	Understandable and verifiable	Understandable, verifiable and more rules based
Use	Used for TAR if approved by the regulator	Calculated by all companies. Used by companies for TAR where internal models are not approved. Used by all companies for MAR.
Parallel Runs	A minimum of 4 to 12 quarters (to be determined by the regulator based on various criteria) of high quality parallel runs per risk will be required	Not required

² This is preliminary and subject to further revision due to impact assessment and calibration.

Financial Requirement Specifics

Regulators will set the Target Asset Requirement (TAR) at a high confidence level representative of a threshold for good quality investment grade securities. As its working hypothesis, the P&C MAC is using, over a 1 year horizon, either a Value at Risk (VaR) with a 99.5% confidence level or a Tail Value at Risk (TVaR) with a 99% confidence level. At the end of the year, there must be sufficient assets to run off or sell the business.

The TAR will be determined according to the following specific requirements:

- **Time horizon** – For purposes of solvency assessment, “time horizon” represents the forward period of time from the date of the solvency assessment during which severe adversity could occur and consequent supervisory action could be taken. The P&C MAC sets this time period at one year. Funds remaining after one year, according to the scenario tested, must be sufficient to allow the insurer to fulfill its policyholder obligations or pass the risks on to a succeeding insurer. In other words, there must be an adequate terminal provision for the remaining risks at the end of the time horizon.
- **Terminal provision** – The amount of assets needed at the end of the time horizon for the insurer to fulfill its policyholder obligations over the remaining lifetime of those obligations or to pass the risks on to a succeeding insurer. The determination of the terminal provision will recognize the severe adversity tested within the preceding time horizon for supervisory action. Further guidance can be found in the Research Paper “*Economic Capital: Calculation of Terminal Provision*” produced by the Solvency Framework Sub-Committee (SFSC) of the Canadian Institute of Actuaries (CIA) and in the “Research Paper on Time Horizons and Terminal Provisions”, KPMG commissioned by the Property and Casualty Insurance Compensation Corporation (PACICC).
- **Confidence level** – Assets must be adequate to provide for the obligations of the insurer with a high degree of confidence. This assessment of the insurer’s risks must recognize the volatility, uncertainty and catastrophic elements of the risks. The regulator will choose the confidence level. As its working hypothesis, the P&C MAC is using, over a 1 year horizon, either a Value at Risk (VaR) with a 99.5% confidence level or a Tail Value at Risk (TVaR) with a 99% confidence level.
- **Consistency** – Asset and liability risks will be assessed in a consistent manner based on “market related information.” There continues to be active Canadian and international debate on the precise meaning of these words as various stakeholders strive for “market related” values to assess streams of asset or liability cash flows.
- **Market risk** - Companies would be free to use their own internally-developed stochastic economic scenario generators subject to regulator-specified qualitative and quantitative criteria, which would include requirements on the quality and amount of historical data. Companies would be required to demonstrate the appropriateness of their internally-developed stochastic scenario generators, even if the generators satisfied the specified qualitative and quantitative criteria. The regulators would reserve the right to prohibit the use of a stochastic economic scenario generator if it believed that the generator was deficient in a material way.

Solvency Framework

The vision paper focuses on the financial elements of the solvency framework. A robust and comprehensive regime should also include regulatory requirements that address governance and market conduct needs and should ensure that these all work together in a fully integrated, cohesive fashion.

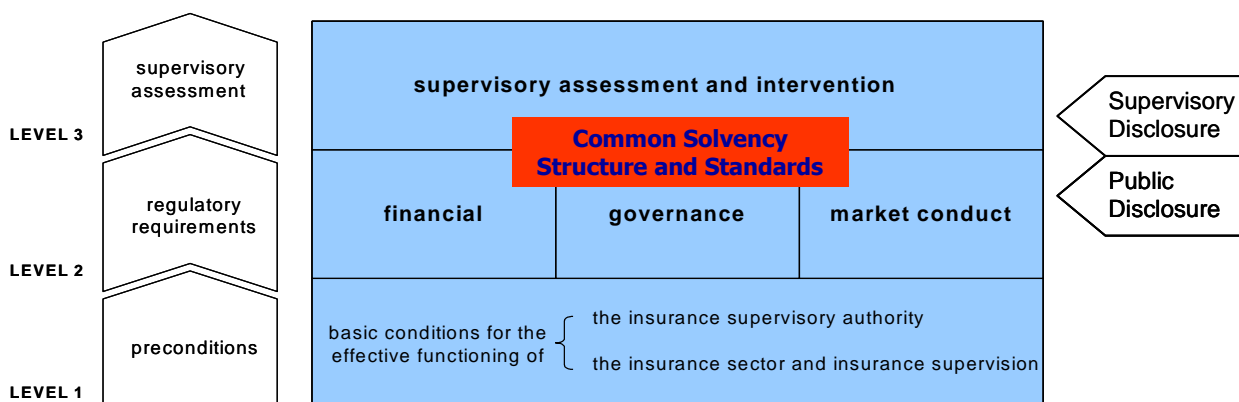
Multi-level approach

The P&C MAC endorses the current multi-level approaches to insurer supervision, a combination of:

- Framework Level 1: Pre-conditions for solvency assessment;
- Framework Level 2: Regulatory requirements;
- Framework Level 3: Supervisory assessment and intervention;
- Disclosure.

These self-reinforcing levels have been suggested by the IAIS and are currently used in Canada. The P&C MAC recommends their continued use in the future. The precise function, design and operation of each level will continue to evolve reflecting the needs of the industry and supervisory best practices.

Supervisory Solvency Framework



Framework Level 1 – Pre-conditions for solvency assessment

Effective insurance supervision requires the existence of a supervisory authority with adequate powers, legal protection and financial resources to exercise its functions and powers. The supervisor must have adequate powers to:

- require the insurer to assess and manage the risks to which it is exposed and appropriately assess and maintain its total financial resources;

- set regulatory financial requirements for individual insurers which should result in insurers holding sufficient assets to protect policyholders' interests under both normal and adverse circumstances;
- require that, if necessary, an insurer takes action to reduce the risks it is taking so that the assets it holds are sufficient.

This set of pre-conditions is already in place in Canada and is assumed to continue to exist in the future.

Framework Level 2 – Regulatory requirements

There are three blocks of topics within Framework Level 2: the financial block, the governance block and the market conduct block. The primary focus of this vision paper is on the financial block, which is addressed in the following section. Governance, market conduct and disclosure requirements are also important, however, they are much broader than solvency assessment and hence only brief reference is made to them in this paper.

Regulatory Financial Requirement

Supervisors use a variety of quantitative measures within Level 2 to assess the soundness of a P&C insurer's current financial position. Principal among these measures has been a risk-based capital requirement (e.g. MCT and BAAT).

In the past, this risk-based capital requirement has been “added on” top of the liabilities determined in accordance with Canadian GAAP (Generally accepted accounting principles).

In the future, we envision that the solvency financial requirement will be determined on an integrated basis using a regulatory asset requirement approach.

In the past, the risk-based capital requirement was associated with varying levels of supervisory action. If companies consistently exceeded a target level set in consultation with the supervisor then normal supervisory oversight might be needed. On the other hand, if a company fell well below the target, it would be subject to increasing degrees of supervisory oversight and action.

In the future, we envision there will continue to be a need for a regulatory Target Asset Requirement (TAR) based on market related information as well as a Minimum Asset Requirement (MAR) to serve as triggers for supervisory oversight and actions. It is likely that strongly capitalized insurers will wish to maintain total asset levels above the TAR in recognition of their financial strength. In the future the MAR will be determined using the standard approach.

In the past, substantial use has been made of risk-based factor determinations of the capital requirements.

In the future, the wider use of internal model approaches will be encouraged. Larger insurers, those technically able and those insurers with complex risks will be encouraged to use the

internal model approach. A standard approach will be available to all insurers. The standard approach will be developed according to the same core principles as the internal model approach and be designed to produce an appropriate requirement across the industry. Its design will reflect lessons from work done by the CIA and insurers using an internal modeling framework.

Governance

Sound governance, supported by effective disclosure, is of key importance for the adequate management of the insurer and critical to the effectiveness of the regulatory regime. Some risks may be addressed only through governance standards rather than by setting regulatory financial requirements. Hence governance standards form one of the key blocks in the solvency framework.

The solvency framework assumes a dynamic risk assessment by the insurer's management. This includes that judgments are made regarding provisioning and capital adequacy. It is, first of all, clearly the responsibility of the insurer itself to fulfill its fiduciary role to policyholders and to manage its risks, value its obligations and procure sufficient capital. It is the role of the regulator to see that this management responsibility is met and to ensure accountability.

Sound corporate governance and professional advice is a prerequisite of any solvency regime where financial and internal reporting, valuations and solvency assessment are dependent on an individual insurer's risk assessment and management systems. Sound corporate governance, properly designed and implemented, is the basis for supervisory assessment of the ability and accountability of an insurer's Board and its management in operating effective risk management systems. Clear, relevant and enforceable professional standards of conduct are appropriate to promote the objectivity and independence of auditing and actuarial professionals.

Sound corporate governance should be firmly rooted in management, and throughout the insurer. Management should have sufficient skills and experience in relation to the insurance business. Management should possess a good understanding of the insurer's risk management, valuation and capital allocation systems. After all, management is responsible for designing, implementing and evaluating the effectiveness of such systems, including monitoring risk exposure limits adopted by the Board.

Management is responsible for ensuring model-based valuations and capital allocation systems function effectively by having:

- sufficient skilled and competent resources dedicated to the modelling function;
- a process, including back testing and calibration to market valuations, with the aim that models and procedures have good estimation power and that valuations arrived at will not be insufficient or structurally underestimated;
- a process to review data for the determination of model input assumptions;
- a process to ensure model input is consistent with general data on the financial markets and company experience as appropriate;
- a review of model-based valuations to find errors and limit weaknesses;

- a credible ongoing effort to improve model performance;
- a regular cycle of model evaluation that includes monitoring of model performance and stability, review of model relationships and testing of model outputs against outcomes;
- adequate documentation of the model, valuation and capital allocation processes.

Management is responsible for ensuring that the insurer makes appropriate use of experts with the proper skills, knowledge and experience.

Market Conduct

Market conduct requirements also form one of the key blocks in the solvency framework. As with governance, some risks may be addressed only through market conduct requirements rather than by setting regulatory financial requirements.

Market conduct requirements seek to ensure that customers are able to select the insurance product that best meets their needs. Sound market conduct policies and procedures are also closely related to the solvency position of an insurer, and should be a key part of the risk management of an insurer. Improper market conduct may have a direct prudential impact on an insurer, or may be damaging to the reputation of an insurer and hence have severe indirect consequences for its financial position and its ability to operate effectively. Sound market conduct needs to be based on a clear understanding by the insurer of the risks covered in the policy contracts, and should be integrated into the overall risk management and governance structure of the insurer.

The solvency regime should be transparent as to how policyholder expectations are reflected in the financial requirements. Constructive obligations³ may arise from the exercise of discretion by insurers under insurance policies. Insurers also use such discretion to manage their risk of financial loss. The extent and nature of the insurers' discretion may vary between policies and insurers. This should be taken into account in specifying the capital requirements.

Framework Level 3 – Supervisory assessment and intervention

In the past there have been many aspects to the supervisory assessment of an insurer's operations. Supervisory review has included the areas of compliance, risk management, governance, audit, external peer review of policy liabilities, etc.

There should also be a solvency control framework, including the company's own assessment of its capital needs, which triggers different degrees of timely intervention by the supervisor. These levels should have due regard to any corrective action that may be at the disposal of the insurer, and of the supervisor, including options to reduce the risks being taken by the insurer as well as to raise more capital.

³ Constructive obligations may, subject to the particular jurisdiction and contract, be legally binding as a result of specific contract wording, past practice of the insurer and/or disclosures made to policyholders.

In the future we expect the need for these aspects to remain and evolve over time in light of industry and supervisory best practices. However, in the future, the “total asset requirement” and internal model determinations of capital will require different types of technical risk management, risk modeling and communication skills to be exhibited by both insurers and supervisors. For insurers wishing to make greater use of internal models, the burden of proof to justify the selection of internal models, their assumptions, data and results will fall to the insurer. Back-testing and validation of assumptions with experience will be needed. Increasingly, internal models will need to be prepared in accordance with professional standards of practice. Supervisory skills and experience with internal models will be needed.

Disclosure

There is a need to differentiate between public disclosure and disclosure to the regulator which is subject to confidentiality. Information provided to the regulator and subject to confidentiality will generally be more detailed and technical in nature. Ensuring appropriate confidentiality not only guards against disclosure of commercially sensitive information but also fosters openness between the regulator and the insurer. Insurers should provide sufficient information to give confidence to the regulator and the public at large that they are appropriately carrying out their responsibility to manage their risks and protect the interests of policyholders.

Public disclosure is critical for a well balanced solvency regime, to the operation of a sound market and to achieve the aims of transparency, comparability and convergence. The use of increasingly risk-based calculations of capital requirements is expected to increase the quality and utility of risk disclosures that should be provided by insurers.

Roles and Responsibilities

Supervisor/Regulator

- Approval of all principles;
- set specific rules and regulations related to solvency financial requirements consistent with the principles;
- internal model approval, including calibration standards;
- review and monitoring of capital requirements as part of overall supervisory review;
- development of the Standardized Approach.

Insurer management

- Internal models embedded in risk management and used in decision-making;
- independently vetted;
- ensure internal models and their results are verifiable, auditable, understandable, etc.
- related disclosures are complete and appropriate.

Auditors

- Ensure required disclosures are complete and appropriate.

Actuaries

- Appropriate guidance and standards are available;
- guidance and standards from actuarial profession and supervisors are followed.

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