A PUBLIC POLICY OVERVIEW

ORSA and the Regulator

February 2016

Developed by
the ORSA and the Regulator Working Group
of the ERM/ORSA Committee
of the Risk Management and Financial Reporting Council
of the American Academy of Actuaries

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This public policy overview was prepared by the ORSA and the Regulator Work Group of the ERM/ORSA Committee within the Risk Management and Financial Reporting Council of the American Academy of Actuaries. This paper is intended to provide regulatory actuaries who are reviewing Own Risk and Solvency Assessment (ORSA) reports with background information regarding Enterprise Risk Management (ERM) processes and what information might be included in the ORSA report.

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We welcome comments and questions. Please send comments to Nikhail Nigam, the Academy's policy analyst for risk management and financial reporting, at nigam@actuary.org.

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Executive Summary

The purpose of this document is to provide regulatory actuaries who are reviewing Own Risk and Solvency Assessment (ORSA) reports with background information regarding the Enterprise Risk Management (ERM) process and what information might be included in the ORSA report. Because the ORSA reporting process is new in the United States, the paper provides general information that will be helpful in the first several years of reviews. It is not intended to cover detailed quantitative ORSA topics. These are likely to be of interest to regulators in the future and the Academy could develop additional materials to help address these topics as appropriate.

The ORSA report provides valuable information to regulators, allowing for the assessment of a spectrum of insurer practices related to managing risk and where individual insurers fall in that spectrum of practices. It provides a single, comprehensive summary of an overall ERM process that regulators have had to historically obtain through a review of multiple documents and conversations with the insurer. Given the global initiatives revolving around risk such as Solvency II and international capital standards, the ORSA report can also be a useful tool for monitoring and comparing key risks of multinational insurance entities, as well as a base in the discussions with their international regulatory counterparts.

For regulatory actuaries review ORSA reports, there are some key areas that should add significant value to the regulatory surveillance process:

1. The source of an insurer's own assessment of its aggregate key risks across all products and lines of business (including non-insurance risks) is not readily available elsewhere to regulators. The ORSA report provides a basis for comparison of current practices, modeling methodology, and the range of results for discussion with individual insurers. It will be a useful tool for facilitating insurer-regulator dialogue.
2. The ORSA report contains information regarding insurer strategies, risks, controls, and results that can be used to obtain a general understanding of the whole organization (including international operations). For example, information gleaned in the ORSA report regarding how an insurer determines its best estimate assumptions and stresses to those assumptions can help a regulator in reviewing the actuarial assumptions used in the pricing and reserving processes.
3. The report should contain a summary of all the enterprise risks, which will enable regulators—regulatory actuaries in particular—to understand the insurer's aggregate key risks, the insurer's approach to mitigating those risks, and the maturity of the insurer's program relative to the industry. This understanding will supplement the information regarding risk exposures identified by the regulator through other surveillance procedures and help to drive additional risk review procedures deemed necessary to gain comfort with the insurer's overall solvency position in light of the risks undertaken.
4. The ORSA summary report provides reasonably consistent information from all insurers in a similar time frame. Regulators can thus assess industry-wide areas that may require more (or less) attention than currently provided and aid their consideration of potential changes to the regulatory framework in order to address those developments.

When coupled with other current regulatory tools, the ORSA report can help provide a more comprehensive financial picture of insurers, the insurance sector, and the risks to the constituents that regulators serve.

I. ORSA and the Actuarial Perspective

ORSA Report Versus Other Required Regulatory Filings

The ORSA report filing from an insurer will include substantial information about an insurer's enterprise risks and how those risks are factored into an insurer's strategic decision-making process. The ORSA is the first regulatory document that looks at insurance company enterprise risk from the management's point of view (rather than, for instance, dividing an insurance group into individual U.S. and international statutory entities). Statutory reports remain useful, however, and it is expected that insurer will be able to explain how the individual statutory entities within the insurance group map to its management view (i.e., profit centers).

It is useful to view the enterprise from the top down. Examples of questions that the regulators might wish to consider are:

- What risks does the insurance group as a whole retain, and does the group have enough capital to cover those risks?
- What are risks to which the group is exposed? How does the group manage the risks? How does the group decide which risks to retain?
- Has the insurer presented sufficient information in its ORSA report to demonstrate that it is effectively managing these risks and has enough capital to withstand moderate-to-severe fluctuations from expected?

While much of the information in the ORSA filing might be new to some regulators, some will have been provided in other regulatory filings, albeit potentially in more of a piecemeal fashion. There is the potential for the ORSA filing to supplement regulatory reviews that are already being conducted.

Because the processes for reviewing regulatory filings somewhat vary by state and will continue to evolve after this document is written, there might not be a common approach across states. The extent to which regulatory filings from other jurisdictions—such as the European Union or the Bermuda Monetary Authority—can be streamlined with the ORSA report has not yet been determined. The manner in which the ORSA filing can be leveraged to supplement other regulatory filings will depend on the state. While the potential exists to streamline duplicative review with an ORSA filing, it remains to be seen how much process consolidation can be accomplished or overlap can be eliminated. There could be some duplication and/or synergy between the ORSA report and documents filed under the National Association of Insurance Commissioners' (NAIC) *Insurance Holding Company System Regulatory Act* (#440) and U.S. Securities and Exchange Commission (SEC) filings.

Maintaining the required confidentiality of the ORSA report could create complications in streamlining regulatory reviews. The NAIC's *Financial Condition Examiners Handbook* states that "ORSA information is highly sensitive, proprietary and confidential, and examiners should

exercise caution to ensure that no ORSA or ORSA-related materials are inadvertently made public in any way, including in any Exam Report."[1]

The reviewer may wish to refer to the *Financial Condition Examiners Handbook* for further guidance on use of the ORSA report in a risk-focused exam.[2]

Use of the ORSA in a Risk-Focused Examination

An actuary in a regulatory role can have the opportunity to review an insurer's ORSA report during the planning phase of an examination to achieve a high-level understanding of the organizational structure of the enterprise, what risks the enterprise faces, and the maturity of risk management practices applied to manage those risks. This foundational understanding of the insurer's perspective can be used by the regulator to open a dialogue with the insurer.

By better understanding an organization's structure, the actuary in a regulatory role can determine the product portfolio of the group and whether actuaries trained in other disciplines may be required (e.g., life, health, and/or property and casualty (P/C)). For an insurer involved in non-insurance operations (e.g., financial products or banking), expertise outside of the actuarial profession might be appropriate. For an insurer with significant non-U.S. operations, participation in a supervisory college may be necessary.

Understanding the current risk profile of an insurer including the risks retained, and taking into consideration any prospective risks that could arise, will permit an actuary in a regulatory role to be better prepared to provide input into decisions on areas of exam focus, necessary examiner expertise, and the time required for the exam.

Furthermore, a regulatory actuary might find it useful to:

- Compare the key risks identified in an insurer's ORSA report to those of other similar insurers to determine whether there are other risks that should be considered;
- Compare the top risks identified in ORSA reports of entities that are similar to the insurer being reviewed in order to note similarities and differences, which may aid in determining focus of an examination; and
- Review previous risk-focused exam results of an insurer to determine whether the insurer has historically demonstrated an ability to appropriately identify and manage key risks.

Insight on Risk Exposures

A key component of the regulatory review process is to assess the risk exposures of the insurer, including, but not limited, to risks related to financial reporting. The ORSA will be a key tool to support this process. An ORSA report will typically include a robust list of key risk exposures and a quantification of those key retained risk exposures. It will typically also include a

[1] Section 1 Subsection X, *Financial Condition Examiners Handbook*, National Association of Insurance Commissioners, 2015, page 160.
[2] Section 1 Subsection X, *Financial Condition Examiners Handbook: Reviewing and Utilizing the Results of an Own Risk and Solvency Assessment*, National Association of Insurance Commissioners, 2015, pages 160-180.

discussion of substantial changes in exposures and the insurer's risk mitigation strategies associated with its top risks year to year.

While regulators already use some disclosures from insurers regarding their ERM practices, as described below, and risk assessments as part of the examination process, the ORSA report will be a single location for extensive information on enterprise risks and their mitigation. It will help in the assessment of risk controls, especially for those risks unrelated to financial reporting, which may not be well documented.

Insight on Capital Adequacy

Section 3 of an ORSA report will include quantification of risk capital on a basis (or bases) that the insurer believes to be reasonable. The regulator can use this information to identify significant risk exposures that may not be captured through existing statutory reserve and capital requirements because they either are not quantifiable or are under/overstated. Examples include:

- Investment risk, if substantial relative to capital, for complex derivative instruments or collateralized obligations that risk-based capital (RBC) would not be able to accurately measure;
- Catastrophe risk, such as terrorism or pandemic risk;
- Underwriting risk, such as mass tort exposure or unearned premium risk on warranty business;
- Regulatory change risk, such as the impact of the Affordable Care Act on health insurers; and
- Operational risks, such as cyber exposures, execution risk, or data security risks.

Because explicit minimum regulatory capital might not be held for these risks, the regulator can look at whether regulatory capital, typically over and above what is required under regulatory RBC, is available for the insurer to cover these risks. In addition, understanding the capital approach the insurer is taking to ensure consideration of these risks in strategic decision-making will help the regulator and analyst gain comfort that the risks will not ultimately lead to solvency issues for the insurer.

The ORSA report may provide information regarding past risks that may have had negative impacts on the insurer's solvency position. This information may give the regulator a sense for how well these issues have been addressed.

Section 3 includes a view on the insurer's prospective liquidity sources and needs at the group level, which will help the regulator identify potential liquidity issues that are not apparent through review of the statutory financial statements or legal entity RBC.

Use of ORSA Reporting to Identify, Measure, and Mitigate Industry Risks

As regulators review several ORSA reports, it will provide them with an improved understanding of which risks are prevalent across a given industry (life, health, P/C). This information may help identify situations in which individual insurers could improve their processes of identifying and quantifying risks, as well as which individual insurers are particularly advanced in mitigation of specific pervasive risks. Items regulators may wish to consider in this regard include:

- Key risks that are prevalent across the industry;
- Differences in risk profiles between individual insurers and how those differences may make overly prescriptive regulations difficult to apply;
- Emerging risks and risks of lessening concern;
- Viable mitigation options for like insurers or the industry, and new risks that may arise related to those mitigations (e.g., counterparty risk); and
- Common approaches, methods, or assumptions for measuring or mitigating risks affecting large sections of the industry (e.g., common models or assumptions used by a large number of insurers that turn out to be inappropriate, creating industry-wide risk).

These items may vary by insurer type (e.g., public vs. private, rating level, etc.).

Over time, a high-level comparison between different ORSA reports may suggest changes that lead to better regulations. A review of ORSA filings could show variations in risk management from weak to robust in scores of different areas and allow regulators to provide insight into best practices that might lead to recommendations benefitting the industry's health.

II. Enterprise Risk Management (ERM)

Goals of ERM

A key goal of ERM is improved entity performance in areas such as enhanced operational efficiency, market efficiency and resiliency, and solvency. The best way to achieve this goal is through strong ERM strategies that are appropriate based on the nature, scale, and complexity of the organization. If an insurer does not use traditional ERM nomenclature or methods but the approach is appropriate for them, regulators may wish to consider an individual insurer's facts and circumstances in evaluating ERM and avoid raising concerns solely due to differences from what is considered "typical" industry practice and terminology.

With the processes of ERM, and in understanding the terminology relevant to ERM, it is useful to focus on consistency, flexibility, transparency, and resiliency. Some specific questions that a regulator may wish to consider include:

1) Does the insurer clearly demonstrate resilience to stress events, including emerging and unexpected events?
2) Does the insurer have processes in place to ensure that resilience will continue going forward?
3) Is there transparency such that necessary communication among group functions is possible and enabled? Are strategic goals, limits, underwriting policies, reinsurance policies, etc. available throughout the applicable organization? How are decisions made involving multiple functions, such as underwriting, strategic planning, pricing, reserving, training, human resources, etc.?
4) Is there consistency? This is related to item 2 above. Consistency in operations and risk management is important to ensure that resilience and transparency today will be available going forward.

5) Is there flexibility? How fast can the insurer alter its strategic plan and risk management to respond to change?

Positive results of the ORSA requirement include enhanced ERM processes and resiliency and increased dialogue between the entity and regulators. The ORSA can facilitate dialogue between regulators of different jurisdictions and between regulators and the enterprise on how resiliency is achieved. Ideally, the communication will be two-way: (1) the enterprise will demonstrate resilience such that key risks are mitigated, and (2) regulators will provide an independent perspective that may lead to questions that provide value to the enterprise.

Fostering Effective ERM in ORSA

A goal of the ORSA process is "to foster an effective level of ERM at all insurers, through which each insurer identifies, assesses, monitors, prioritizes and reports on its material and relevant risks identified by the insurer, using techniques that are appropriate to the nature, scale and complexity of the insurer's risks, in a manner that is adequate to support risk and capital decisions."[3]

A well-developed ORSA report can provide a regulator with an indication of the maturity of an insurer's ERM program. This can help a regulator determine whether additional regulatory focus is warranted, and, if so, which areas may require further review.

The intent of an ORSA report is for the insurer to provide a regulator with its own view of risk. Variation of what is reported across insurers is to be expected.

Insurer Organizational Structure and Business and Strategic Planning

To gain better understanding of the extent to which an insurer has embedded ERM to create a risk management culture, a regulator may want to become familiar with the insurer's organizational structure and its business and strategic planning processes. The following two sections summarize what may be included in the ORSA report with respect to these areas, which form a foundation for the risk management framework covered later in the paper.

Organizational Structure

The organizational structure of an insurer has a direct impact on its fundamental exposure to risk, as well as on the potential for the risks to diversify or aggregate. The impact of the organizational structure on ERM, the level of risk management, and the composition of capital is an important consideration. For example, an insurer may have diversifying risks across multiple legal entities or business units, but if capital cannot be moved between the entities, such diversification may be treated differently from an ERM perspective than if the capital can move freely between the entities or units.

From a regulatory perspective, an ORSA report provides information on an insurer's structure and its implications on the company's capital level and solvency. In reviewing this information, it might be appropriate for a regulator to consider other regulatory frameworks involved with

[3] *Own Risk and Solvency Guidance Manual*, National Association of Insurance Commissioners, July 2014, page 1.

monitoring the insurer as a result of various aspects of its organizational structure. For example, a global insurer with operations in a European Union country may be subject to the requirements of Solvency II, in which case it would be important to understand how those requirements are considered in the ERM process and capital assessment.

An ORSA report may include, but is not limited to, the following information regarding an insurer's structure:

- Whether the insurer is a standalone or part of a group, which will indicate whether or how risks may be aggregated or diversified;
- The location of the business (e.g., local, regional, national, or international), which will impact the nature of the risk exposures;
- The ownership structure (e.g., stock, mutual, fraternal, private), which will impact both the nature of the risk exposure and the types of risk metrics that are important to the entity; and
- The breakdown of operations by and within industry sectors and the extent to which operations (and the associated risk management approaches) are:
    - Independently managed;
    - Distinct operating units; or
    - Complementary in nature or create friction due to competing goals; and
    - Impacted by effects associated with complementary or competing regulatory frameworks.

The organizational structure of the insurer will have implications on the insurer's capital structure and prospective solvency, for example, the capital position of a legal entity as compared to a group, and the ability to move capital across the organization.

Business and Strategic Planning

Insurer risks can be introduced, elevated, or reduced as a result of anticipated changes to the insurer's business model or strategic objectives. This may result from plans to grow, contract, restructure, or make changes to capital management strategies (e.g., reinsurance structure, strategic plans to deploy excess capital, investment strategy, etc.).

In reviewing an insurer's ORSA, a regulator might consider the overall quality and completeness of an insurer's business and strategic plans as well as performance relative to historical plans. The quality and completeness of an insurer's baseline planning process is also important for purposes of risk quantification, stress testing, risk mitigation, and capital management, because the base plan is often the starting point for risk analysis.

An ORSA report may include, but is not limited to, information relative to strategic or business plans regarding:

- Whether plans are achievable in light of the insurer's profile (e.g., size, business mix, operations) and the external environment (e.g., external risk factors, economic conditions, demographic shifts);
- Why past targets may have been missed and what lessons were learned;

- Potential early warning indicators to know whether the insurer is on plan, ahead of plan, or behind plan; and
- Capital considerations, including:
  - Capital targets and allocations by operating units;
  - Growth or erosion of capital over time;
  - Anticipated changes to the capital structure;
  - Any capital restrictions within the plan;
  - Sources generating capital and whether the cost of capital is minimized;
  - Whether the plan generates appropriate capital for additional risk being considered; and
  - Whether the plan optimizes capital.

An insurer with a mature ORSA process will be able to show how the results of risk identification, quantification, mitigation, and risk and capital management are considered as part of the strategic and business planning process. For example, risk appetite and specific risk limits should be considered as part of business planning to assess whether planned initiatives may result in a breach of risk appetite or risk limits.

III. ORSA Report Elements

The following sections of this paper describe the three sections of the ORSA report, the typical ERM processes associated with each section, and the types of information that regulators can expect to see in each of the three main sections:

- Insurer's Risk Management Framework;
- Insurer's Assessment of Risk Exposure; and
- Group Assessment of Risk Capital and Prospective Solvency Assessment.

Description of the Insurer's Risk Management Framework

Section 1 of the ORSA report provides the regulator with background information on the insurer's strategy, business objectives, and overall ERM framework. Specific elements to be covered in Section 1 are described in detail in the following sections.

Risk Culture and Governance

This section of the report will describe the structure of the insurer at a high level, including roles and responsibilities, approach to risk communication, and the manner in which risk taking and risk management occurs throughout various parts of the enterprise.

From a regulatory perspective, an ORSA provides information about an insurer's risk governance and provides an indication of the pervasiveness and effectiveness of the insurer's risk culture. Similar to how corporate governance information is already used as part of the risk-focused surveillance process, risk governance can also be used to assess the extent to which key risk exposures of the insurer are reduced through a strong risk culture and governance process. The strength of the risk culture and governance of an insurer might influence the rating of the strength of controls on key risks identified as part of the risk-focused examination process. This,

in turn, will impact how much independent analysis of residual risk exposures are performed as part of an examination.

In addition, by providing an aggregate view of how risk is governed across the insurers being studied, ORSA reports can enable the proactive identification of insurance sector risk and provide insight into how these risks might be mitigated.

An ORSA report may include, but is not limited to, information regarding:

- The governance structure surrounding decisions about the insurer's risks (i.e., who is involved in risk taking, risk monitoring, and risk mitigation, who "owns" the activities and who has input or approval authority, what committees are used, etc.);
- Whether risk management activities are coordinated or whether decisions are made in isolation;
- Whether designated risk owners have an appropriate and sufficient level of independence, authority, and accountability;
- The insurer function(s) responsible for developing and monitoring adherence to the risk management framework;
- The insurer function(s) responsible for quantitative risk analysis and modeling;
- Structured oversight and challenge mechanisms in place for all risk management activities, including quantitative risk analysis and modeling and the associated validation of methodologies and assumptions; and
- The involvement of the board.

The process for developing a risk culture, where the wider management group incorporates risk-related inputs as part of its regular decision process, takes time. Often, the concept of a formal risk culture starts with a risk department. Though there may be a desire for senior management to be as informed about their business and industry as possible from a risk perspective, it takes time, care, and effort for risk metrics appropriate for a given insurer to be defined, for relevant data to be gathered, for tools based on the risk metrics (e.g., stress and scenario testing (SST), reverse stress testing (RST),[4] economic capital, economic gain/embedded value, etc.) to be developed, and to determine:

- How those risk tools might be used by management;
- How long internal training and process buy-in will take; and
- When and how management will incorporate risk metrics into its decision-making process.

If the concept of risk management is restricted to the risk department, risk management in practice might not have much influence on the actual management process. However, it is important to keep in mind that the appropriate level of sophistication and pervasiveness of these practices will vary according to the complexity of the insurer itself.

[4] Reverse stress testing identifies scenarios that cause insolvency or other adverse economic outcomes and then investigates their likelihood and possible mitigation strategies.

An effective risk governance structure clearly defines and articulates risk management roles and responsibilities while promoting a risk culture that supports accountability in risk-based decision-making. Effective risk governance is often evidenced by the consideration of enterprise risk in decision-making throughout the organization, and open lines of communication to enterprise leadership that allow employees to raise risk concerns. Effective risk governance may provide useful information to leadership regarding the inherent and residual risk profile of the organization. Evidence of maturity in various areas of risk culture and governance is discussed further in the subsections that follow.

Risk Considerations in Strategic and Operational Planning

The maturity of an insurer's risk process is often demonstrated by the extent to which strategic and operational plans are influenced by risk considerations. Considerations in evaluating maturity include the treatment of risk appetite, the business planning process, the normal rhythm of risk conversations and activities in the insurer's annual planning cycle, and feedback from management on the risk process.

One way to examine the extent of the risk culture within an insurer is to evaluate how well it has permeated the planning and forecasting process. This is a core component of any insurer's annual business cycle. During that time, the insurer focuses on how the financials of its current block of business are expected to perform under various metrics, how various new business strategies might impact those metrics, and what additional business decisions are required to achieve various target metrics over the next one to five years. Many of the other day-to-day management decisions made outside of the planning cycle will ultimately interact with the plan that was set out.

Because a variety of departments contribute quantitative metrics to the planning and forecasting process (e.g., finance, valuation, modeling, pricing, investments, mergers and acquisitions, etc.), the risk framework will impact these various areas in insurers with mature risk cultures. In such companies, department heads involved in the senior management team will be comfortable with how to interpret the various risk metrics and qualitative risk concepts and incorporate them into their decision-making process. The board will understand the overall risk framework well enough to understand and challenge how management incorporated risk into their decisions.

Though the business planning process is core to the annual business cycle, there are many day-to-day business decisions that must be made throughout the year. Another way to evaluate the degree of embeddedness of the risk framework is to examine how it is used in the other "regular" parts of the business cycle.

Management and Board Risk Committees

One indication of a moderate to mature risk culture is the existence of one or more risk committees that meet on a regular basis. One committee may be an executive risk committee, which includes members of senior management from various departments (i.e., not just risk and actuarial), all of whom have responsibility for understanding, evaluating, taking, and mitigating risk. The information provided to the executive risk committee is often prepared by the risk team and will generally include standardized risk metrics that focus on both short- and long-term factors, risk-based commentary on key initiatives, and updates from the sponsors on existing and

developing key risks. There may also be specific risk committees below the executive risk committee, such as a financial risk management committee, an operational risk committee, etc.

In addition to an executive risk committee, there will usually be a board-level risk committee. Though the frequency of meetings may be less than that of senior management, the board-level risk committee supports the board's ability to evaluate management's performance and the appropriateness of their decisions.

If senior management and the board are dedicating regular time to review individual key risks, the risk framework has likely permeated the thinking of those who set the insurer's culture.

Risk Management Policies and Philosophies

Another indicator of ERM maturity is the existence of formal policies for key risk taking and risk management activities. These policies typically include information such as:

- Roles and responsibilities of individuals and committees in carrying out, reviewing, and approving activities;
- Minimum requirements regarding processes and controls for the activities;
- Limits and associated escalation procedures in the event of limit breaches; and
- Required communication and reporting, including nature and frequency.

Examples of policies that would likely exist in an organization with moderate to mature enterprise risk management include:

- Risk management;
- Investment;
- Asset-liability management;
- Model governance;
- Liquidity;
- Business continuity;
- Underwriting;
- Product development; and
- Pricing.

However, the mere existence of such policies does not imply mature ERM. In order to assess maturity, it is important to understand not only whether documented policies exist but also how they are used, whether compliance with policies is monitored, how breaches are treated, how frequently the organization reviews and updates policies, and who is responsible for policy approval.

Risk Appetite, Tolerances, and Limits

Prior to the ORSA reporting requirement, a regulator might not have had access to information summarizing the insurer's enterprise view of risks relative to its strategic objectives and enterprise exposures relative to those risks. The ORSA report will provide this to the regulator through the discussion of the insurer's risks; such discussion is developed at the overall enterprise level and includes a consolidated view of desired risk taking and actual exposure relative to that desire.

The ORSA report will describe risk appetite and risk limit setting. For an insurer with a relatively mature ERM, risk appetite will include a set of enterprise-level risk metrics that are aligned with the insurer's strategic objectives and may include target capital and liquidity ratios, growth targets, and operational targets. In insurers with more mature risk cultures, the risk appetite and risk limits will not only be included in the planning analysis but will actually influence how the final business plan was determined. If one approach for a plan exceeded the risk appetite, management would then require adjustments to the plan to bring the risk in line with the appetite. Operating within the risk appetites and limits should not only be a point of focus in the more immediate but also the mid- to long-term time horizons.

The insurer will typically have a stated "risk appetite" in addition to "risk tolerances" and "risk limits" for significant risks. While there are many different definitions of these terms, one potential set of definitions is as follows:

- Risk Appetite: A primarily qualitative document that states an insurer's overall principles with respect to risk taking given its business strategy, financial soundness objectives, and capital resources. For example, "Capital resources will not fall below 350 percent of RBC."

- Risk Tolerance: Qualitative and quantitative boundaries that describe an insurer's preference for or aversion to particular types of risk in accordance with its risk appetite. Quantitative risk tolerances set limits for the amount of risk that an insurer will take. For example, "Capital will not decline more than 15 percent over a three-year future period with 99.5 percent confidence."

- Risk Limit: Quantitative boundaries that express the amount of risk an insurer is willing to take on, beyond which management review may be required. Risk limits are typically more granular than risk tolerances and may be expressed at various levels of aggregation: by type of risk, category within type of risk, product or line, or some other level of aggregation. Risk limits should be consistent with the insurer's overall risk tolerance. For example, "Equity investments will not exceed 10 percent of the insurer's total investments, on a market value basis."[5]

Considerations for evaluating maturity of risk appetite, risk tolerance, and risk limits for an insurer could include, but are not limited to:

[5] *Insurance Enterprise Risk Management Practices*, Enterprise Risk Management Committee, American Academy of Actuaries, July 2013, retrieved from http://www.actuary.org/files/ERM_%20Practice_Note_July_2013_0.pdf.

- The formality of the approval processes: what level of sign-off for each and how frequently are the appetites, tolerances, and limits refreshed. A mature ERM environment will have formal and frequent processes for review and approval of appetites and limits;
- The extent to which risk appetites, tolerances, and limits are used in the planning process and other significant strategic decisions. Moderate maturity is indicated by consideration of risk appetite and limits in the planning process. Highly mature ERM involves use of risk appetite analysis as part of all key enterprise decision-making;
- The extent to which limits are breached, and actions taken in the event of breach. Risk limits that are never breached are likely too wide and not particularly useful, and risk limits that are breached without associated management action are also not useful. These factors may be indicators of relatively immature ERM environments. More mature risk appetite analysis involves monitoring both breaches and capacities, and taking appropriate action in both directions;
- The frequency and timeliness of the analysis. To be useful for decision-making, risk appetite analysis needs to be performed frequently and shortly after the evaluation date of the analysis;
- The metrics evaluated as part of risk appetite analysis. Mature assessment of exposures relative to limits should include both current time and prospective exposures, and should consider current conditions as well as exposures under stress; and
- The extent to which risk appetite is "cascaded" to business units. For example, when limits are breached, how is risk mitigation "allocated" to the individual businesses driving the breach? When there is capacity with respect to limits, which business units may "use up" excess capacity? A more formal structure for this is an indication of mature risk appetite analysis.

Risk Identification, Analysis, and Prioritization

Good risk management includes a regular, qualitative risk assessment process. Qualitative risk assessments are used to supplement and inform quantitative risk assessment methods such as economic capital, RBC, and stress testing.

The process and framework for conducting qualitative risk assessments is generally developed and maintained by the ERM department so that the approach and tools are consistent across the organization. The actual risk assessments that include the identification, analysis, and prioritization of risks, however, typically take place within individual business units. The ERM department is generally responsible for aggregating risk across all business units to summarize and report on the top risk exposures across the organization.

One highly useful component of the ORSA process from a regulatory perspective is the summary of an insurer's identified risks. An ORSA report can be viewed as a primary and consolidated source for information about the organization's identified key risk exposures. This report will supplement the risk exposures identified by the examiner or analyst and drive the additional risk review procedures necessary to understand with overall solvency.

Considerations for evaluating the maturity of an insurer's risk identification, analysis, and prioritization include, but are not limited to:

- Use of a consistent framework and tools across the enterprise to identify, analyze, and prioritize risks (e.g., consistent risk taxonomy, consistent risk analysis measures, the use of risk registers, etc.);
- Engagement of individual business unit leadership in performing risk assessments;
- Consideration of emerging and not just current risks;
- Aggregation of risk exposures across the organization; and
- Consistency of reviewing and updating risk assessments at regular time intervals (generally, this should be done on at least an annual basis or whenever significant change involving the fundamental dynamics underlying the business occurs or is planned).

In order to effectively leverage ORSA information about key risk exposures (and mitigation of them), regulators will need to ascertain whether the process the insurer uses to identify, quantify, and prioritize such exposures is robust. Therefore, when reviewing an ORSA, it is important for the regulator to understand the procedures and the governance that the insurer is utilizing to identify, quantify, and prioritize its risks.

Good risk management typically includes a regular formal risk assessment process. Such a process is typically overseen by the risk department so that the approach and tools are consistent across the organization. However, the actual identification and quantification of key risks are typically done within the business units. At least annually, but sometimes more frequently, business units are asked to identify and quantify the key risks to their areas. This practice could include use of a formal "risk taxonomy," which is a summary of the various types of risk exposures that might exist, summarized into a set of key categories such as market risk, credit risk, operational risk, etc. Use of a taxonomy helps to ensure that as individual risk exposures are aggregated, there is consistent terminology and categorization to allow for accurate aggregation.

The participants within the risk identification process are very important to the success of the process. Having the appropriate group of key participants, with both broad and deep knowledge of the business and its key risk exposures, will support effective identification of the key risks of the insurer. Thus the regulator should determine who within the insurer and the board of directors is participating in the risk identification process and whether those individuals have sufficient understanding of the business and its risk exposures, as well as an understanding of the overall risk identification process. The board's participation will show all of the participants that the risk identification process is critical to the insurer and enable the insurer to identify the key risks that will be measured and mitigated.

When the insurer has identified risks, they are often organized into a risk register—a repository of identified risks with specific, consistent information about each risk, such as how it fits into the overall risk taxonomy, who owns the risk, information about quantification, etc. This is a central document that details all of the risks faced by an insurer. The risk register is a living document that is constantly updated to reflect the changing nature of the risks and the evolving environment in which an insurer operates. To the extent a risk register or similar documentation is not part of the ORSA report, the regulator may wish to request this detail, as the overall listing of enterprise risks can be helpful in understanding the insurer's risk profile.

It is important that the insurer include an identification of key material risks, a quantification of those risks, and recent significant changes in the risk profile as part of the ORSA report.

The insurer typically would rank individual risks by incorporating frequency and severity assessments for the risks, often both before and after risk mitigation (e.g., ceded reinsurance, hedging assets, etc.), and considering interdependencies across risks based on the enterprise internal analysis. The ranking could also consider the speed at which the risk will have an impact (speed of onset or velocity). The ERM team is typically the owner of the risk aggregation process, taking information from the business units regarding the risk exposures, severity, frequency, and velocity and aggregating them across the enterprise. Those representing the top retained exposures are then reported to the risk committee and the board, and mitigating actions are taken as needed.

It is very common for insurers to have lists of risk exposures. However, in evaluating whether the ERM environment is mature, regulators should look for a consistent framework used across the enterprise to identify, quantify, and prioritize risks; leadership of the process by the business units; consideration of emerging risks and not just current risks; aggregation of exposures at the enterprise level; regular reporting and monitoring; and specific actions to mitigate exposures that exceed the enterprise's appetite. This last component is discussed further in the next section.

Risk Management and Controls

This section of the ORSA report will describe how the organization manages its risk exposures. It is directly linked to the sections below, because risk management at the enterprise level will apply to those risks identified through the risk identification process, and the extent to which risks are to be retained versus mitigation will be driven by the insurer's risk appetite, tolerance, and limits.

Good risk management involves specific statements of the risk limits for material risks and evaluation of whether those limits are in line with the insurer's risk appetite. It is common to revise these risk limits as exposures, strategies, and/or risk appetites change. In addition to the overall enterprise risk limits, there will also be risk limits specific to certain key activities, businesses, and risks. For example, the insurer may have a limit on the overall level of mortality risk desired for the enterprise and also specific retention limits for individual blocks of business and individual lives. A mature risk appetite framework might involve linking the overall enterprise limits to the specific limits.

Evaluation of the way the insurer monitors its risk limits (e.g., a risk dashboard) and who participates in the monitoring process will provide insight into the level of its maturity. Indicators of good ERM practices include regular and complete risk reporting, assigned accountability for risk monitoring, and a process for handling situations where the risks fall outside of the stated limits.

Other factors to consider include the participants in this process, the role of the risk committee and board, the existence of strong quantitative tools to determine risk exposures, and metrics that enable effective and quick identification of limit breaches. Strong risk management also includes policies to address how the insurer should react to various risk realizations.

Considerations regarding the appropriateness of risk mitigation in light of the nature, scale, and complexity of the insurer include: the products offered;[6] the investments made; counterparty rating; cross-training of employees; product specific approaches;[7] and larger-scale strategies and actions that an insurer uses to respond to specific and large risks, such as those involving capital markets, fungibility, and reinsurance. Considerations regarding the appropriateness of risk mitigation strategies include:

- Whether capital markets are a viable option and whether there are limitations in regular and stressed conditions that an individual insurer or the industry as a whole needs to consider;
- Capital fungibility (ability to move capital between entities in different jurisdictions);
- Extent to which there are agreements in place that have been authorized by the lead regulator to support this fungibility;
- Existence of accessible and viable reinsurance for the individual insurer; and
- Regulatory limitations (e.g., inability to exit a state).

Risk Reporting and Communication

Even the strongest risk management processes will not achieve the desired results without a solid approach for reporting on risks and risk mitigation. This section of the ORSA report will describe how risk topics are communicated, including "upward" and "downward" communication of risk.

A foundational element of good risk management is the existence of a standard set of risk reports that are regularly shared with senior leadership, risk committees, and the board.

It is important to have regular, open, two-way communication about risk. It should be the responsibility of all employees within an organization to proactively manage their risk responsibilities and communicate any concerns regarding risk. Employees should have avenues to report risk to their supervisors or, if needed, directly to the risk function. Leadership should also communicate to their teams the importance of risk management, how it is carried out in the organization, and what is expected of each individual in their day-to-day activities.

Risk Framework Feedback Loop

The ORSA report may include a discussion of the "feedback loop," or how the enterprise risk information is used to drive insurer strategy, business decisions, and business plans. Regulators might consider indications that such a feedback loop exists, as it is an indication of mature ERM. If the ERM information does not influence decision-making and strategy, it could be an indication that ERM is not taken seriously, that senior leadership does not "buy in," or that the information being developed is not appropriate or useful. The more ERM influences business decisions, the more engaged management will be with ERM and the more feedback they will provide regarding the appropriateness of the ERM approach. Ongoing tailoring of strategy, risk appetite, risk limits, and risk mitigation is a desirable trait within an ERM program.

[6] E.g., underwriting guidelines that outline how an insurer will choose to take on risk, the policy limits and exclusions, state/class exit, and clear contractual wording.
[7] E.g., policy restrictions or elements that can be changed by the insurer mitigate future risk.

As the risk framework is introduced and matures, it is expected that the new risk metrics and reports will present new information or new views of existing information that will expand and challenge management's current thinking. Some results might have been intuitively understood but other findings may be quite unexpected. Management will typically challenge the reasonability of certain parts or even significant parts to the risk findings. It should not be inferred that this process be adversarial in nature, but rather as a natural maturing process for both parties. The risk findings will inform management and management will inform the risk function.

Formal feedback loops can help facilitate this maturing process of the risk framework. As management and other users—such as business units, internal audit departments/personnel/units, and external auditors—use and review the risk framework, there should eventually be a formal process for introducing feedback to risk. This feedback could include changes to the existing process, identification of new or growing risks, model changes, etc. A broad range of participants from different departments and different levels of seniority would demonstrate that the risk framework has become an integral part of the insurer's culture and its day-to-day business decisions.

Considerations in evaluating the feedback loop and the associated maturity of the risk framework include:

- The extent to which risk information drives strategic decisions, strategic focus, and business plans;
- Existence of a formal, documented process for business owners to provide feedback on the risk framework;
- How recommended changes are reviewed, approved, and incorporated into the risk framework to continually improve the relevancy and reasonability of the risk metrics and information relative to strategic objectives; and
- How often the feedback is provided and by whom. For example, feedback only from the risk committee or corporate functions might indicate relatively less maturity than feedback from a broad range of stakeholders.

Insurer Assessment of Risk Exposure

As described above, insurers will use both qualitative and quantitative approaches to assess risk exposure and prioritize risks. This section focuses on the quantitative aspects of risk assessment. An insurer must demonstrate how it measures exposure to risk. In Section 1 of the ORSA report, the insurer should identify and prioritize risk. The risks with the most potential impact on the solvency of the insurer should be assessed in Section 2. Similarly, risks with the most potential impact on insurer, policyholder, or shareholder value should also be assessed in Section 2.

An actuary, while not required by regulator guidance, has the education and expertise needed to assist in the review of this section with regard to reserves, pricing, interest rates, market risk, asset risk, liquidity, and fungibility. Actuaries are experienced in considering variability and probability, both of which are key to understanding stress tests and implications for required reserves and risk capital.

The NAIC's *Financial Analysis Handbook*[8] states, "The lead state analyst should be aware that the lead state examiner is tasked to update the assessment by supplementing the lead state analyst's assessment with additional onsite verification and testing. The lead state analyst should direct the lead state examiner to those areas where such additional verification and testing is appropriate."

ORSA reports are likely to be reviewed every year, but insurance exams are often only completed once every three or five years. An ORSA report reviewer should be able to identify areas where additional investigation would be prudent. The reviewer may also identify areas in which the group's assessment of risk exposures is particularly robust or weak.

The NAIC ORSA Guidance Manual[9] states, "The commissioner may provide input regarding the level of stress that the insurer's management should consider for each risk category." The manual also indicates that the robustness of the ERM process can have a bearing on the scrutiny given by exam departments.

Consequently, an actuary could help to evaluate three related areas:

- Where the group's analysis of exposure is particularly robust or weak;
- When additional investigation during an exam would be prudent; and
- Recommendations with regard to severity and completeness of stress tests.

Insurers will use a range of methods and models that in evaluating risk exposures. It is important for regulators to understand whether these methods and models are appropriate for the specific facts and circumstances of the insurer, as there is generally not a "one-size-fits-all" approach.

Examples of items that might be considered when evaluating the ORSA report include:

- Severity of stress testing performed, including:
  - Depth of scenarios tested/range of scenarios tested. For example, if interest rate risk is material to an insurer, the insurer is likely to be testing a wide range of interest rate scenarios;
  - Use of outside models for developing stress tests;
  - Severity of stresses, such as how the levels were selected and whether they have been calibrated to certain likelihood levels; and
  - Use of reverse stress testing, if any;
- Completeness of the stress testing, including:
  - Inclusion of all material risks, combined risks, and interrelationships among risks; and
  - Use/analysis of stress tests that result in failure. Reverse stress tests that determine the amount of stress needed to "break" the insurer can be informative;
- Appropriateness of the time horizon considered;

[8] *Financial Analysis Handbook*; Attachment One-E p11, National Association of Insurance Comissioners, 2014.
[9] *Own Risk and Solvency Guidance Manual*, pages 7-8.

- Models used as part of stress testing, the relationship of those models with other enterprise models, the validation approaches for those models, and approaches for deriving and testing assumptions;
- Mitigation strategies; such as hedging and reinsurance;
- Other management actions and whether they are supported by actual historical experience; and
- Changes in exposures from prior reports.

The NAIC ORSA Guidance Manual does not mandate specific risks for review but does offer possible examples of foreseeable and relevant material risk categories such as credit, market, liquidity, underwriting, and operational risks. In reviewing the information provided in this section of the ORSA report, regulators would want to pay particular attention to risks and exposures that are emerging or significantly increasing over time.

As an example, property and casualty insurers are likely to include the aggregate insured values by geographic area for use in catastrophe modeling. The insurer may also keep track of the largest retained limits, as a single full limit loss can be equivalent to that of a catastrophe. For lines with more volatility, an insurer might limit the amount of exposure by sub-class, geographic area, type of insured, and/or reinsurer due to uncertainty in loss and price estimation.

Estimating Risk Capital

Traditionally, capital has been generally defined as the excess of assets over liabilities and represents cash available to invest in new opportunities or to return to shareholders. However, insurers and regulators distinguish between what is typically called "free" capital, and "required" (or "risk") capital, which is a limitation of capital that is held to offset against possible variations in estimated reserves, as well as higher-than-expected claims. This distinction provides a segregation of equity into capital held to safeguard against uncertainties in the organization. What is often referred to as "surplus" or "free capital" is not really free, but rather is needed to cover insurer uncertainties or investment in new initiatives or less liquid assets.

Stress & Scenario Testing (SST)

SST evaluates the strength of the business by subjecting it to varying combinations of economic, liquidity, operational, reputational, regulatory, etc. conditions with differing degrees of severity. Though scenarios can be developed by the risk team, a potentially better approach would be to engage a diverse group from senior management to propose potential scenarios and discuss their financial outcomes. SST enables management to consider a range of future impacts on the strategy, determine which impacts are most significant to the enterprise, and identify and evaluate potential management actions that could enable them to fully or partially achieve their targets under adverse conditions. Linking the detailed stress tests to the underlying drivers or to actual historical events—for example, recessionary events, pandemics, terrorism threats, etc.—can be helpful in improving senior management and board understanding and engagement.

Reverse Stress Testing (RST) is similar to SST, though under very severe levels of adversity. RST is intended to identify what event or series of events would cause the insurer to fail or achieve another defined adverse economic outcome. Each individual insurer could have different definitions of failure, though they each tend to articulate an inability to continue as a business

(e.g., regulatory takeover, ratings downgrade, inability to attract new business). By identifying what will break the insurer, management can make plans or re-evaluate its risk appetite/limits to help insulate it from events of this severity. This process will also help management determine how to efficiently work through a potential wind-down.

Group Assessment of Risk Capital and Prospective Solvency Assessment

Prospective Capital and Solvency Assessment

The practices surrounding an insurer's prospective group assessment of required capital,[10] compliance with required levels held, and integration within strategic decision-making explain a great deal about its ERM framework and its focus on capital management. The prospective assessment typically shows, under normal and stressed conditions, whether the insurer's future capital and liquidity levels will continue to be sufficient to support the insurer's business plans. Capital and liquidity in future years are typically compared to the insurer's targeted levels of capital and liquidity as defined by the enterprise risk appetite. The prospective assessment will therefore help to measure whether an insurer is operating within its risk appetite, as well as whether its business plan is within that appetite. The assessment will help demonstrate whether ERM is integrated in the business planning decisions. This ORSA section examines how the risks are identified by an insurer and incorporated into the assessment of capital required to ensure its solvency, both currently and prospectively.

The insurer's own self-assessment should:

- Consider prospective solvency, not only in "normal" conditions but also under stress;
- Consider both prospective capital and prospective liquidity needs;
- Reflect the insurer's profile, including items such as coverages offered, investments, and counterparties;
- Incorporate key risk factors that the insurer believes to be material;
- Consider interrelationships among risks specific to the insurer;
- Account for the behaviors specific to the insurer's policyholders; and
- Contemplate management's response to risk (ERM practices).

An ORSA report should articulate the insurer's perspective on required capital and corresponding level of solvency. The assessment should detail, among other items, the self-assessment methodology and the risks contemplated in the model. Individual companies will determine their required capital based on a variety of approaches, which will depend on enterprise strategy and business model, complexity of the business, and other enterprise-specific factors.

In some cases, it could be challenging to quantify certain risks for purposes of assessing solvency (e.g., liquidity risk). Further information regarding qualitative risk assessments is covered in the prior section *Risk Identification, Analysis, and Prioritization*. In some instances, companies may use approximation approaches in order to add these types of risks into the capital analysis. In other instances, there might not be a specific component of capital for an unquantifiable or hard-

[10] The amount of capital needed to cover risk exposures, based on an insurer's approach to defining required capital for the enterprise.

to-model risk. This is an area where regulators will likely need to have a robust dialogue with the insurer to understand its approach based on its specific circumstances.

The calibration of a capital assessment can vary among insurers. Components of the calibration could include:

- The accounting or valuation basis or bases upon which capital is measured. The insurer's measure may be on a Generally Accepted Accounting Principles (GAAP) shareholder equity, U.S. statutory policyholder surplus, rating agency adjusted policyholder surplus, or an insurer's own economic capital definition, among other bases. For example, deferred acquisition costs or unrealized gains on investments may or may not be considered as available capital, depending on the accounting basis. Due to the potential size of these balances, these items could have a significant impact on an insurer's perspective on capital adequacy;
- The time horizon (one-year versus multiyear, runoff versus current calendar year) for measurement in combination with the security standard and risk capital metric (e.g., 99.5 percent Value at Risk (VaR), 99 percent Tail-VaR, 1 percent expected policyholder deficit). These describe an insurer's tolerance for risk and should be aligned with the insurer's risk appetite. Generally, the longer the time horizon and the more extreme the security standard and risk capital metric, the higher the resulting capital amount will be.

The ORSA report should explain the calibrations used and the rationale for the selected approach.

For an insurer to determine required capital, the key assumptions must reflect its exposures to risk and the relationship between those exposures. If inflation is a primary concern of the insurer from an underwriting risk perspective, modeling assumptions should contemplate inflationary impacts. If rising interest rates pose a key risk not only to the value of investible assets but as a potential driver of inflation, the key modeling assumptions should address the interdependence of these two risks. In addition, the extent to which management action is incorporated into the modeling highlights the comprehensiveness of the thought process that goes into modeling required capital.

Further, the flexibility of capital movement across entities within an insurance group in combination with the overall group capital adequacy has a bearing on future access to capital of each statutory entity from a solvency and a long-term growth perspective. As a result, fungibility of capital between an insurer's entities is an important consideration in the measurement of required capital.

The quality of an insurer's analysis can be tested in multiple ways that can assist it in self-assessing the reasonableness of its evaluation of required capital. This testing can similarly facilitate the regulator's assessment. Comprehensive modeling includes reasonableness testing of the capital assessment and, as necessary, revisiting the modeling approach as a result of this testing. Testing is typically performed at a sufficient level of granularity and with an appropriate frequency to confirm that the modeling approach and the consequent results are reflective of the prospective risk profile.

Although historical experiences generally do not repeat, a comparison of modeled results against historical experience or experience adjusted to current cost and risk levels can provide useful feedback on whether the model accurately addresses the likelihood and magnitude of events that an insurer has already experienced. In addition, back-testing, by modeling historical years, could affirm the insurer's assumptions or bring them into question.

While scenario testing is a means of assessing capital, scenarios can justify the reasonableness of the capital self-assessment. Modeled results for events as large in size as estimations of realistic disaster scenarios assist in substantiating the enterprise modeling. If what is perceived as an extreme scenario is a frequent event in modeled results, it would raise questions of whether the assumptions underlying the modeling are too severe or whether the perceived likelihood of an event is realistic. To the extent that an insurer's assessment is supported by a distribution of results, milder stresses—e.g., a 1-in-25-year event—it could be useful in assessing the reasonableness of the distribution.

Benchmarking to regulatory and rating agency capital models can be helpful in testing the reasonableness of an insurer's self-assessment. It can highlight specific strengths and weaknesses of the insurer analysis as well as external models. An insurer's assessment might not be supported by a wealth of its own historical experience. External history or even external capital model results could offer a reasonable assessment. Likewise, if internal analysis factors into the class mix, coverages, expense structure, or payout patterns specific to the insurer, there may be a notable and explainable divergence between insurer and external assessments. This is an area that regulators might want to review as part of their examination and analysis.

To the extent that an insurer does a good job governing and validating its capital assessment, it could lead to a regulator placing more confidence in the results of the analysis.

Just as actuarial reserve analysis or the financial reporting process requires sound internal controls, controls within the capital assessment process can demonstrate the organization's experience and the focus it places on capital management. The existence of the following can provide evidence that comprehensive controls are in place in the following areas:

- Process owners;
- Governance of modeling and methodology, and changes to both;
- Limitations to model access and other controls surrounding the modeling;
- Robust review of modeling assumptions and results at an appropriate frequency, including model validation by a qualified independent internal or external party;
- General understanding of the capital assessment by the executives and the board of directors of the insurer (at a minimum if not greater involvement);
- Formal documentation of the capital assessment process, assumptions, methods, judgments, and governance; and
- Checks on accuracy and completeness of data.

In summary, from an ERM perspective, the self-assessed capital and corresponding solvency position can provide information to the enterprise and the regulator pertaining to the following (and various other observations):

- The adequacy of available capital and circumstances that could impact capital adequacy, currently and prospectively;
- Whether the modeling of capital is in line with the enterprise's risk appetite;
- The effectiveness of risk mitigations in place; and
- The need for current or alternative risk mitigation and/or capital strategy actions.

The enterprise should not only use this information to assist in the further evaluation and evolution of its ERM practices, such as those outlined above, but the ORSA report should also be able to demonstrate that the capital and solvency self-assessment is integrated into the enterprise's strategic decision-making.

In using the modeling to aid decision-making, an insurer needs to consider the limitations of modeling. For example, some common limitations include items such as:

- Unknown policyholder behavior and exercise of options embedded in insurance products, especially in the tail;
- Future management actions, such as investment decisions;
- Estimating the impact or likelihood associated with certain operational and strategic risks;
- Estimating the impact or likelihood associated with other non-quantifiable risks; and
- Developing multi-year capital projections.

For some companies, the prospective solvency assessment could be part of a broader capital management process. Capital management is the process by which an insurer evaluates capital needs, capital sources, and allocation of capital across business initiatives, and measures the return on capital investments. Examples of broader capital management analysis that an insurer with good ERM would undertake include:

- Assessing the effectiveness and efficiency of the capital structure;
- Optimizing capital usage, including investment mix or a mix of underwriting portfolio, and pricing for capital usage; and
- Having a well-defined process for measuring return on risk capital.

Sources of Capital

Common capital sources that an insurer might use to respond to specific or broad risks are:

- Capital markets, commonly through debt raises and share offerings;
- Capital guarantees or injections from the parent; and
- Reinsurance, used to free up capital.

The effectiveness of an insurer's capital management is affected by its access or even the industry's access to these capital solutions. While an insurer's rating may cause capital markets or reinsurance to be an expensive or unavailable option, a credit crisis can limit the entire insurance industry's access. Capital fungibility and regulatory approvals of up/down-streaming capital impacts the ability to obtain capital guarantees or injections from a parent. The cost of additional capital tends to be much higher than typical in times of crisis.

Furthermore, credit for capital solutions allowed by regulators or rating agencies could limit the value of the solution. An increase in an insurer's debt ratio will increase the amount it is leveraged and its financial risk, which will reduce the amount of credit a regulator will permit. In addition, the terms of the debt can increase or lessen the financial risk of the capital solution. Full and appropriate consideration for these issues can strengthen an insurer's ability to make sound capital management decisions.

Capital Measurement

As discussed above in the *Insurer Assessment of Risk Exposure and Risk Quantification* section, management and regulators have segregated capital into required capital and free capital. There are a wide variety of goals and definitions of required capital. An insurer's ORSA should clearly articulate:

- The purpose and definition of required capital;
- How capital flows through the entity's corporate structure, incorporating diversification;
- The time horizon for that capital and when it is calculated;
- The criteria for capital determination; and
- How sufficiency/reasonability of capital is measured. Examples include:
    - 99 percent Tail-VaR based on the insurer's internal model;
    - 99 percent VaR based on the insurer's internal model;
    - The capital necessary to satisfy the Bermuda Monetary Authority or a Solvency II regime; and
    - Acceptable RBC.

Regulatory powers that are often linked to the definitions and levels of required RBC:

- Require additional reporting and supervision;
- Limit sales, product approvals, and/or dividends to shareholders; and
- Remove management and find new management to run off liabilities.

The portion of capital held as an additional "risk charge" on both the assets and the liabilities must be determined by insurance regulators in order to ensure that there will be sufficient funds to meet all obligations.

Therefore, when assessing capital in an ORSA, the regulator might want to consider:

- The accounting system in use for measurement: U.S. GAAP, U.S. statutory accounting principles, Solvency II, the International Financial Reporting Standards, or some other system;
- The techniques used in measurement of assets and liabilities;
- The advantages and disadvantages of the methods/techniques used to measure capital;
- How the variation in assumptions or methods impacts the amount of capital;
- The basis of measurement used by management: the ERM system, dashboards, in defining various levels of target capital or base/minimum capital, etc.; and
- The various regulatory and management triggers and targets.

In addition, the items that insurers typically consider in management of regulatory capital include:

- The capital needed above regulatory required capital to allow new sales and access to additional capital; i.e., the methods to raise capital including parent, market, new premiums/sales, etc.;
- The lines of business that provide a more profitable or less risky return on invested capital;
- How to manage each individual line of business product and asset levers in changing risk environments;
- How volatile the risk measures are for capital charges in changing economic environments; and
- The level of shareholder or policyholder dividends that can be declared.

The target(s) set by the management relate to the amount of additional capital needed to assure shareholders/policyholders that they can expect a reasonable assurance of getting back their funds via the emergence of profits over time and the sale of new profitable policies.

IV. Conclusion

As described in this paper, an ORSA report provides valuable information to regulators, allowing for a better assessment of an insurer's risk management approach and an understanding of where individual insurers fall in the spectrum of ERM practices.

In this early stage of ORSA report review, it is important to recognize that, due to the evolving nature of ERM, there is a wide range of industry approaches that could be appropriate depending on a given insurer's facts and circumstances. Understanding the maturity of an insurer's ERM program will involve evaluating how it is actually using the process to influence its strategy and decision-making and whether the insurer is appropriately capturing its material risk exposures. However, it will be challenging to accurately benchmark the specific practices against industry standards, and such an approach is likely not the best way to understand the quality of the ERM program.

Over time, as the ERM processes across the industry are better understood, it will become easier to evaluate ERM maturity. In addition, the quantitative components such as stress testing and prospective solvency analysis will help regulators better understand risk exposures that might not be obvious under the statutory accounting framework. Use of these tools will help to influence how extensive the overall financial surveillance process for the insurer is. In other words, insurers with strong ERM practices might not require as much surveillance, and those with weak ERM practices might require a more targeted or extensive review.

The ORSA process will be an excellent tool for regulators to obtain a comprehensive understanding of the insurer's risks and risk mitigation approaches and should lead to a more open and regular dialogue regarding risk.