Enterprise Risk Management in a Highly Uncertain World

North American CRO Council

A Presentation to the Government-University-Industry Research Roundtable

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CRO Council Introduction

Mission

- The North American CRO Council is a professional risk management group that seeks to ***develop and promote sound practices in risk management throughout the insurance industry***
- Council members represent Chief Risk Officers of leading insurers based in North America, who as a group, aim to provide thought leadership and direction on the advancement of risk management and risk-based solvency and liquidity assessments

Formation

- Developed and provisionally organized in 2010
- Founding membership and structure formalized in Q2-2011

Membership

- 13 of the 15 largest North American Life insurers
- 11 of the 15 largest Property & Casualty insurers

Insurers actively manage risk through a framework of linked activities

Enterprise Risk Management Framework

Risk culture and governance "sets the tone" for intelligent risk management in the organization

Principle

Effective ERM requires a governance structure with clearly defined and articulated roles, responsibilities and accountabilities; and a culture that supports accountability in risk-based decision making

Key Attributes of Risk Governance

- Board-level oversight for ERM
- Established risk committees, including Executive Risk Committee, with defined charters and accountability
- Executive management engagement/sponsorship
- CRO/ERM team is an integral part of Executive Management Team
- ERM team is critical partner in business; but business owns risk-taking
- ERM provides an independent view of risk profile and risk-reward trade-off
- ERM should foster a strong risk culture within the organization, so that risk considerations enter into day-to-day decision making
- Governance implemented through risk appetite, tolerances/limits, and policies

Each insurer has a different appetite and tolerance for risk; limits are in place that reflect this

Principle

A formal risk appetite statement, and associated risk tolerances and limits are foundational elements of risk management for an insurer; Board understanding of the risk appetite statement ensures alignment with risk strategy

Comments on Risk Appetite and Tolerances

- While common definitions are still emerging, a risk appetite (or tolerance) statement is a description of the types and amounts of risks that a firm is willing to take or avoid in pursuit of its goals
- It is a tool for senior management and the board to set clear boundaries for an enterprise's risk taking
- It often tries to link earnings, capital & liquidity, and operational processes; critical linkage between ERM and business strategy
- In addition to being a good business practice, having a documented risk appetite is becoming an expectation (e.g., IAIS principle 16.8)
- Risk limits vary with the nature, scope, and complexity of an insurer's business and its own specific risk exposures

Generally risk appetite and tolerance is defined across four dimensions

- ERM focuses on more than solvency; many companies express their risk appetite, tolerances and limits along four key dimensions of risk:

Capital risk	• Material loss of capital • Ratings downgrade
Earnings risk	• Income volatility • Failure to meet plan • Underperformance versus peers
Liquidity risk	• Extraordinary need for cash to fulfill liabilities • Illiquidity of assets; market failure • Poorly designed, inadequate liquidity facility
Franchise risk	• Damage to reputation • Loss of customers and top-line revenue • Loss of employees/talent/capabilities

- The focus is on the aggregate level/amount of risk to be accepted by the enterprise

Risk identification is organized around defined categories of risk

Common Risks

Market Risk
Fixed Income-Rates
Real estate
Alternatives
Private Equity
Equity
Volatility
FX

Capital &Financial Management Risk
Risk Based Capital Constraints
Rating Agency Requirements

Credit Risk
Default Risk
Migration Risk
Counterparty
Reinsurance

Product Risk

Reputational Risk

Strategic Risk
Business Focus
Changes to external environment

Model Risk

Operational Risk
Process
Systems &Technology
Information management
Vendors
Safety, Security, BC

Legal, Compliance and Regulatory Risk

Life and Annuities Companies
- Mortality, longevity
- Policyholder Behavior (e.g., persistency)
- Expense
- Product Guarantees
- Reinvestment Risk

Property and Casualty Insurance
- Catastrophe
- Inflation
- Environmental

Prioritization is critically important to determine which risks are most significant to the organization

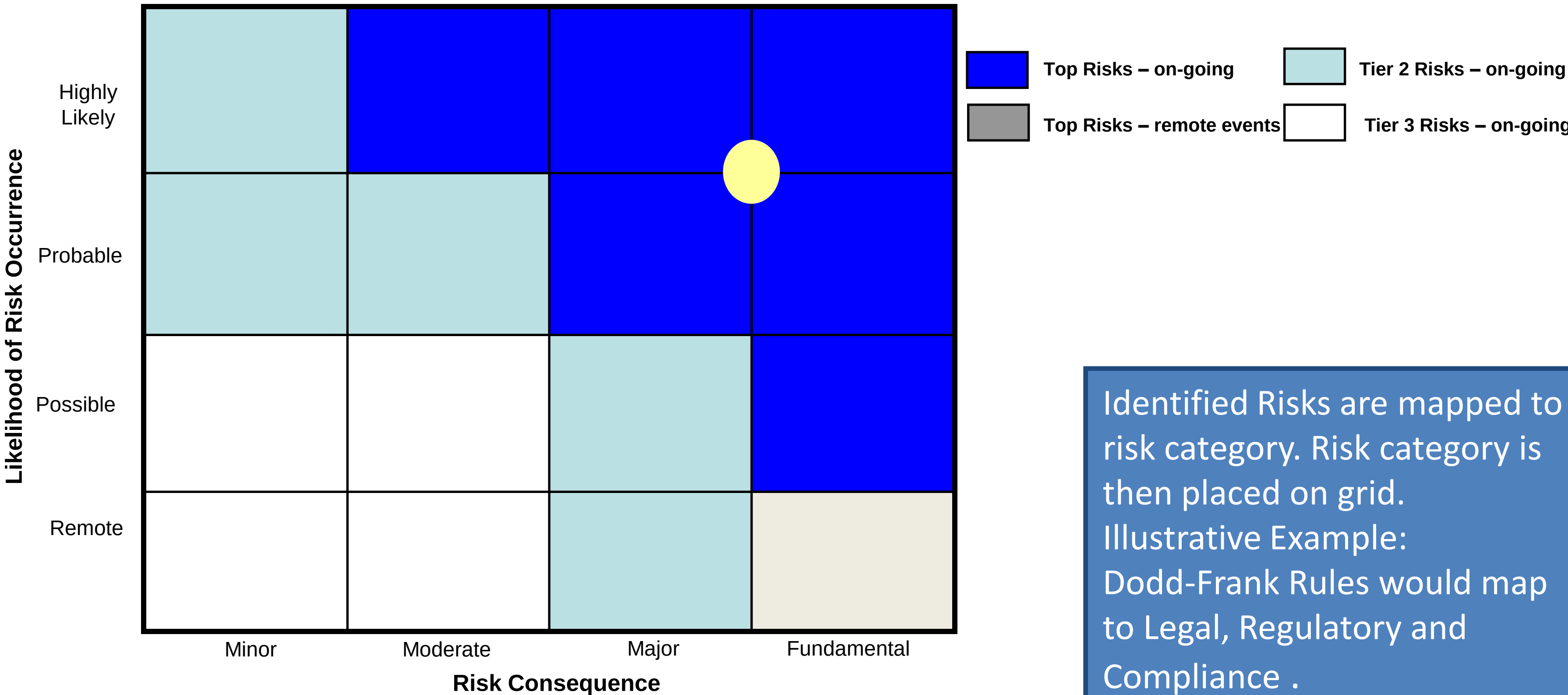
Principle

Risk Assessment is a key ongoing process; ownership of this activity within each major risk should be clear; the ERM function ensures that the process is appropriate and functioning properly at all organizational levels

Comments on Risk Prioritization

- Prioritization is based on both quantitative and qualitative criteria and is used to guide the allocation of risk management resources
- Risk identification begins in the business with the ‘first line of defense’
- For risks that are known, focus is on ongoing prioritization and on tactical assessment. Evaluate whether and how to accept, avoid, mitigate or offset risk
- For risks that are emerging, there should be an ongoing effort to identify, evaluate and develop plans to get in front of the risk and / or develop contingency response plans
- Risk correlations should be considered as well as risk diversification.

Prioritized risks can be displayed graphically to achieve broad understanding and alignment on the top risks



Identified Risks are mapped to risk category. Risk category is then placed on grid.
Illustrative Example:
Dodd-Frank Rules would map to Legal, Regulatory and Compliance .

Risk Categories

Strategic
Operational
Legal, Regulatory and Compliance
Reputational
Product
Investment
Capital &Financial

Modeling is important to better understand the risks: key elements regarding risk modeling and measuring

Risk factors:

Examples: Interest rates, credit spreads, claim liability estimation, product pricing, inflation, customer retention, catastrophe, pandemic, operational risk, market conduct

- Specify stress values for each risk factor, and associated probabilities
- Specify dependency structure across risk factors

Risk portfolios (assets and liabilities):

Examples: Equities, investment-grade corporate bonds, personal auto claim liabilities, variable annuity business

- Specify value functions that describe how each portfolio responds to movements in risk factors

Aggregate Gains or Losses:

Outcomes (Gains and Losses due to all combinations of risk factors — with associated probabilities

Evaluation of modeled results (best estimates, range of results) with key risk tolerances

Risk capital requirements

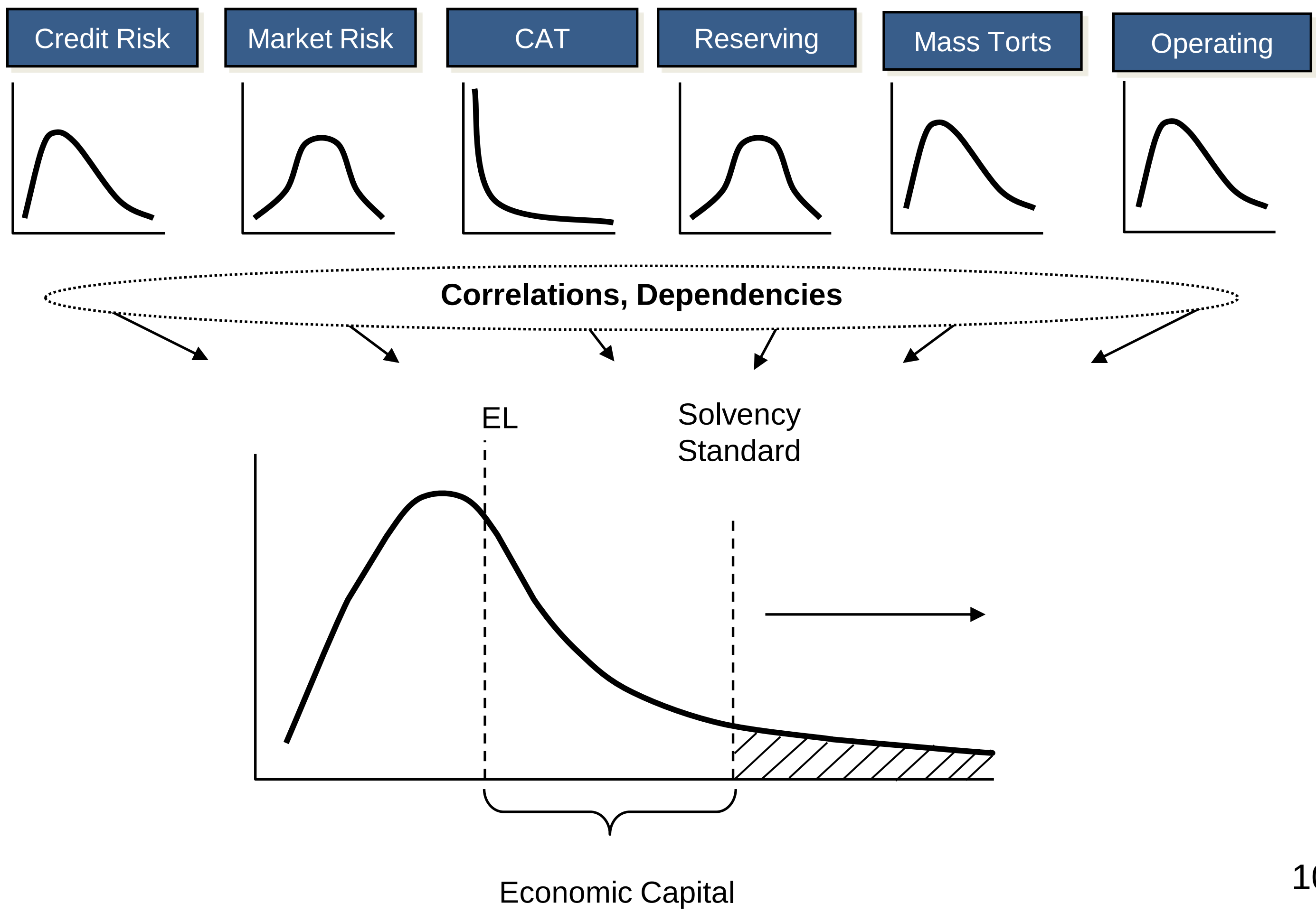
Valuation basis:

- **Economic**
- **Statutory**
- **GAAP**

Loss distributions are combined, along with stress testing, to obtain the full *risk profile* of the business

ILLUSTRATIVE

1. **Characterize the risk distributions**
2. **Combine distributions**
3. **Measure required capital**
4. **Attribute capital to products and business units**



Regular reporting of risk and communication across the organization is critical to reinforce risk culture

Principle	The objectives of risk reporting are to provide key constituents with transparency into level of risk exposures and risk management processes
Comments on Risk Reporting	• Typically, risk reporting will occur on both regular and exception cycles; and will occur at all levels within the organization — Board, executive, and operating management • Just like any other management process, risk reporting should act to 'bring the process to life", by providing clear scorecards on the performance of the risk management function • In addition to reporting "up the chain of command", there should be downward communication to provide feedback • Education on risk and risk-management processes is often a key element in communicating to the Board and management • In reporting to external parties, confidentiality is extremely important given the strategic importance of risk information

Risk is typically reported in a "dashboard" which contains risk metrics that reflect exposure levels

- Individual risk domain specific exposure metrics (e.g. duration mismatch for ALM) translate to financial impact metrics which articulate risk appetite
- Financial impact metrics may vary based on differing & multiple basis of financial reporting. Illustrative examples for earnings and capital

illustrative examples of metrics

Basis of Measurement	Earnings: Periodic	Earnings: Lifetime	Capital: Available	Capital: Required
US GAAP	*Net income*	*NPV*	*GAAP Equity, GAAP Capital*	*Investor focus*
Statutory Accounting	*Distributable earnings*	*IRR, NPV*	*Statutory Surplus*	*Regulatory adequacy testing*
Economic	*Risk adjusted profit*	*Embedded Value*		*Management set standards*

Or for varying scenario conditions

illustrative examples of purpose for reports

	Earnings	Capital
Business as Usual	Planning & maintaining target profitability	Planning & maintaining target profitability
Stress case	Earnings volatility management	Sustain solvency and possible margin under adverse outcomes

Key take-aways regarding Enterprise Risk Management

- What We've Presented:
  - An illustrative, high level ***ERM framework***
  - ***Key principles*** supportive of sound risk management practices
  - ***Examples*** of current approaches (not exhaustive) and the evolving state of practices amongst CRO Council members

- Some Key Take-aways:
  - **No "one size fits all"** approach to ERM – meaningful differences can, do, and often should exist
  - Sound ERM **practices continue to evolve** – alongside changes in products, strategies, and risk profiles
  - ERM must be **tailored** to an institution's unique risk profile, culture, and strategy, and should be proportional to the complexity therein
  - **Balanced focus** on quantitative and qualitative (models are important, but not in-and-of themselves equivalent to good ERM)

CRO Council Contact Information

The North American CRO Council welcomes the opportunity to provide an integrated industry perspective on risk and capital management issues and to work with the GUIRR in the future

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Questions?