

# ERM and Economic Capital

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# Agenda

- **ERM overview**
- **Economic capital**
- **Rating agencies' perspectives**
- **Highlights from Tillinghast ERM survey**
- **ERM and the recent financial crisis**
- **EC and reinsurance**
- **EC and Japan**
- **Conclusion**

# ERM Overview

# Definition

- **What is ERM?**
  - “How an organization assesses, controls, exploits, finances and monitors risk from all sources for the purpose of increasing the organization’s value to stakeholders.”

# Growing Interest

- **Why is ERM becoming so attractive?**
  - Recent corporate disasters
  - Increasing competition
  - Increasing exposure to market volatility
  - More complex business models
  - Growth of secondary market for transfer of risk

# Growing Interest

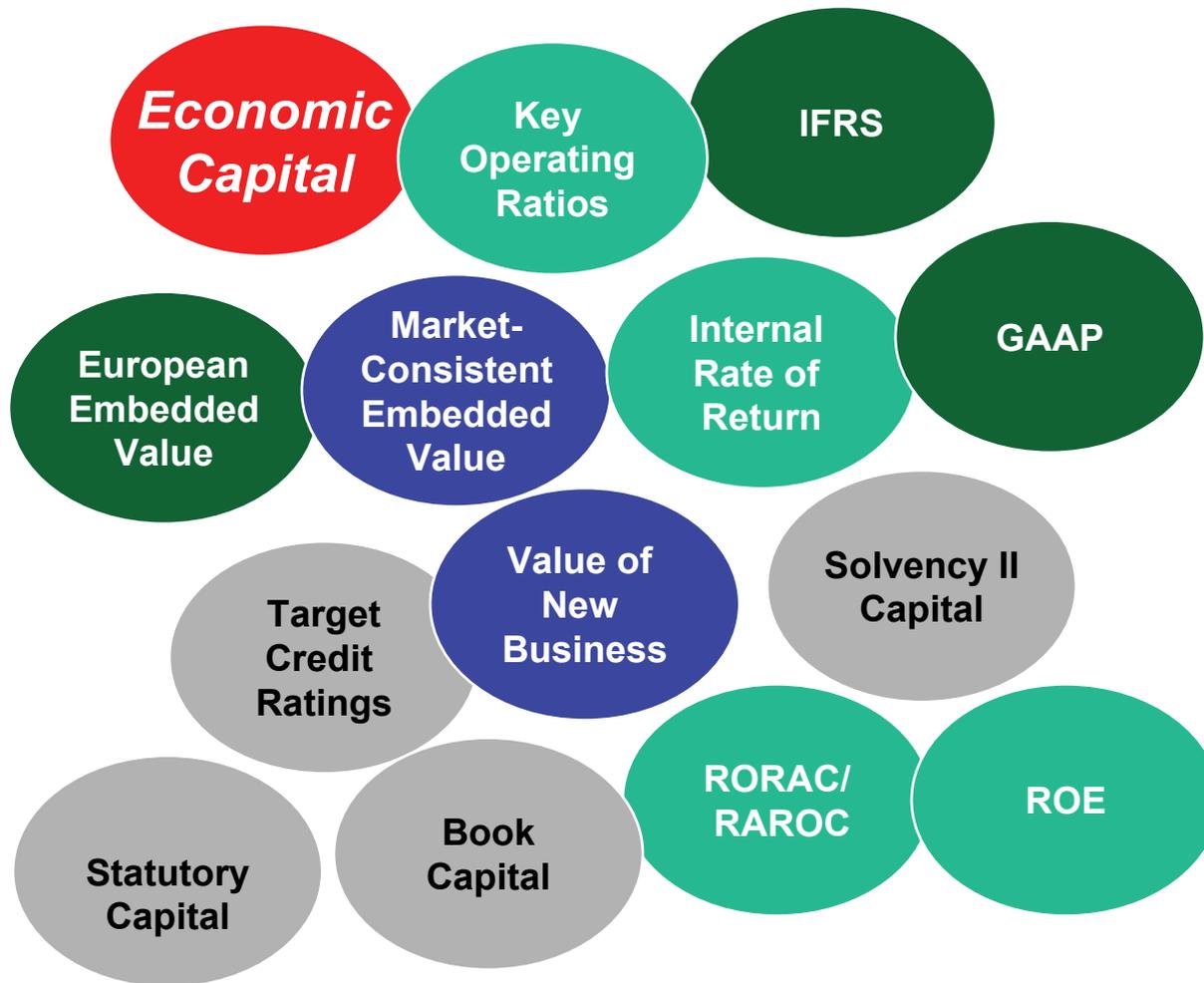
- **Why is ERM becoming so attractive?**
  - More stringent regulatory environment
  - Emergence of better risk mitigation techniques
  - Global initiatives on risk management
  - Tangible results from early ERM adopters
  - Rating agencies incorporating ERM in assessments
  - Increasing demand from stakeholders in understanding insurance risks

# Growing Interest

- **Another driver is dissatisfaction with historical ERM approach**
  - Risk management was performed in silos
  - Focus was on satisfying regulatory requirements
  - Different risks were “owned” by different organizational units and managed independently

# **Economic Capital**

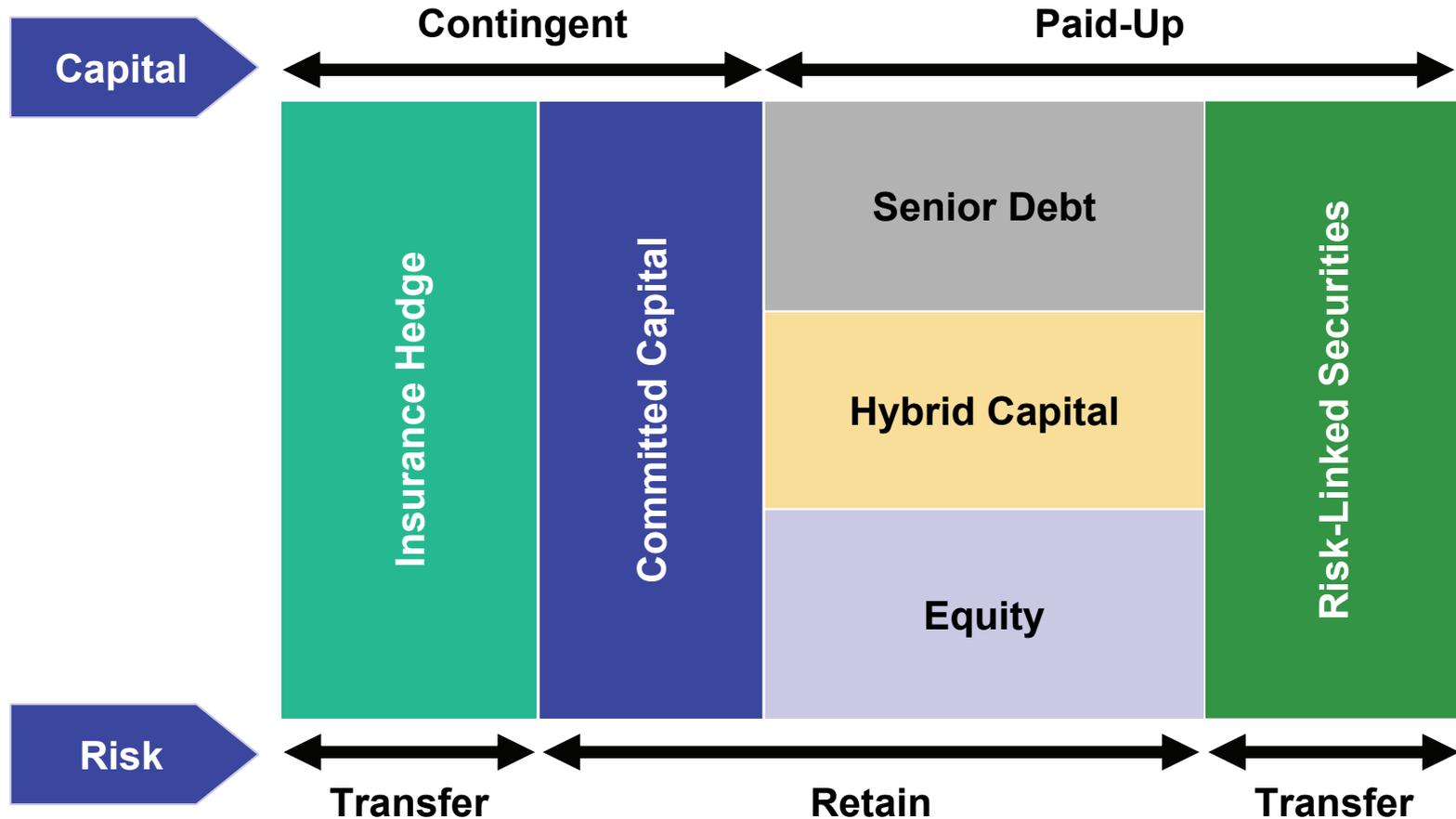
# Management is Dealing with Many Complex Metrics



**Company  
Leadership  
Must  
Overcome**

- Inconsistency
- Confusion
- Information Overload

# The Complete Picture Supports Better Business Decisions



# Why EC Now?

- Multinational companies and large domestic companies have adopted EC following European regulations requiring use of EC metrics
- Solvency II is having global impacts, including the subsidiaries of multinationals
- EC has proven to be an effective device in measuring appropriate capital needs and is being used by more and more companies
- Because it has proven effective, more and varied North American firms are implementing and considering implementing EC
- Rating agencies agree and are starting to incorporate EC models in their view of insurance companies

# The Risk/Capital Connection

**From an economic perspective, risk and capital management work together**

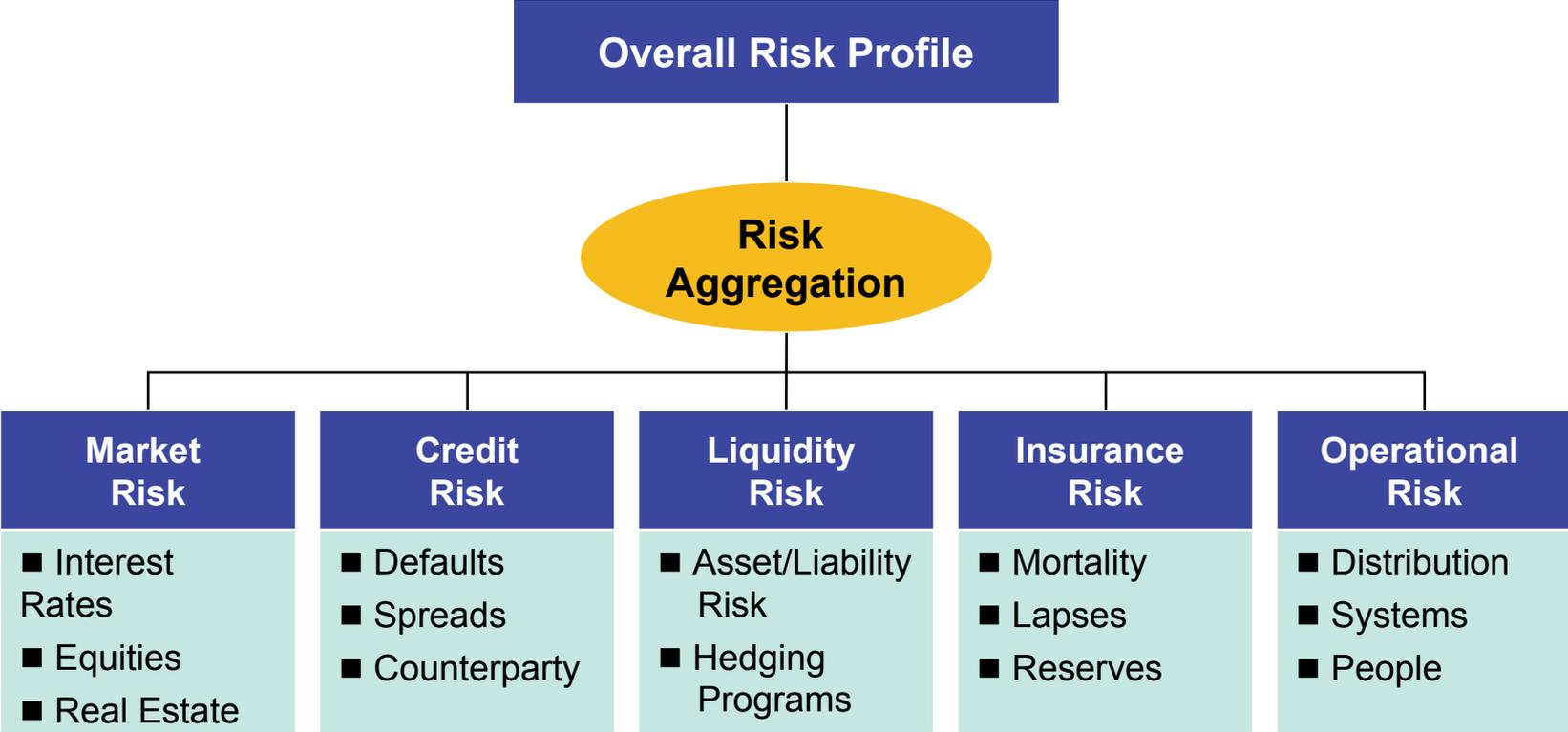
- **Capital management delivers the optimal capital resources — both paid-up (equity, debt, preferred, hybrid) and contingent (line of credit, insurance, interest rate swaps, commodity hedge) — sufficient to:**
  - Support the needs of a firm
  - Cover the risk exposures that the firm faces
- **Risk management ensures the firm's operational and financial exposures are controlled and supportable by its capital resources**

# The Risk/Capital Connection

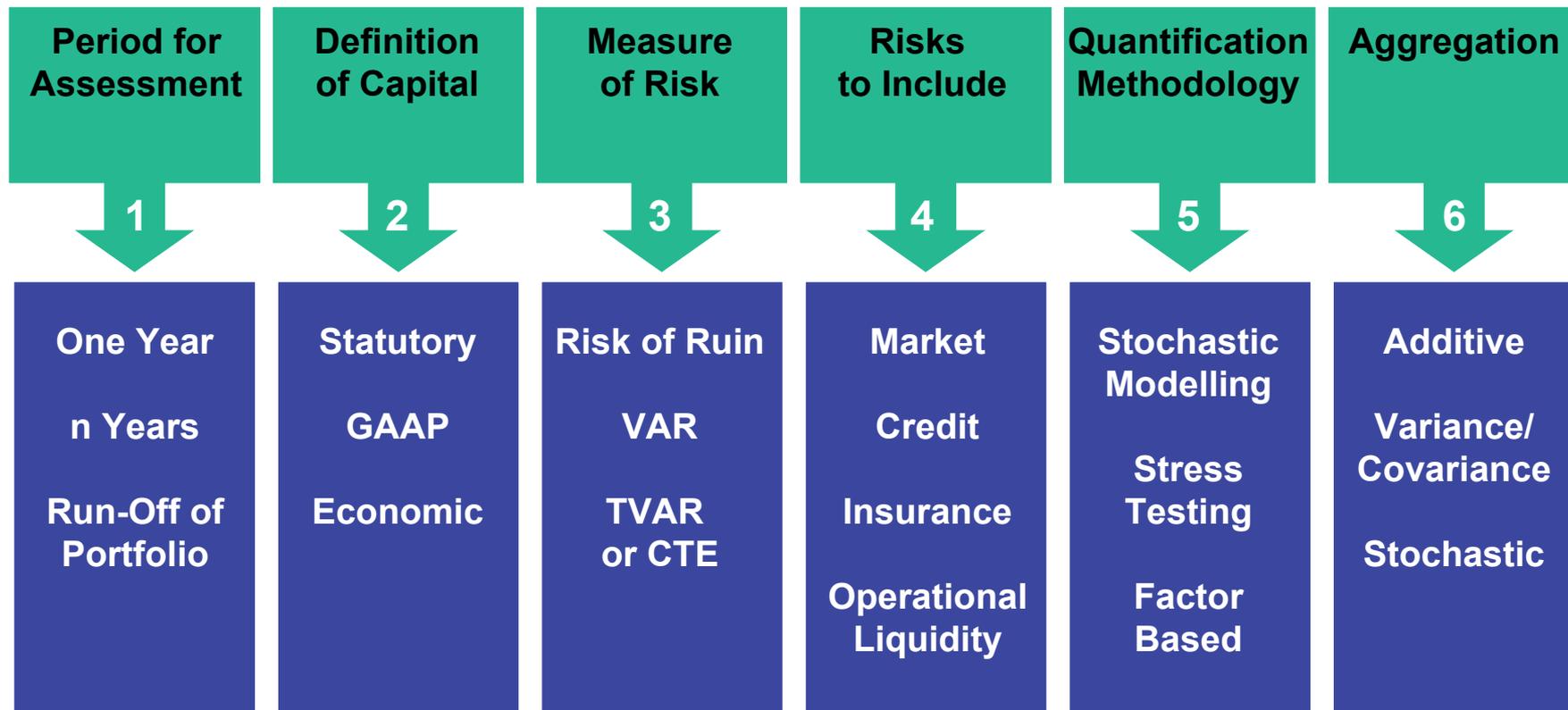
**Capital resources have two basic purposes:**

- **Operational capital**
  - used to produce goods and services such as plant, equipment, patents, staff, inventory
- **Risk capital**
  - used to support inherent volatility in operations such as varying economic conditions, catastrophic events and uncertainties in revenues and costs

# EC Calculations Include All Material Risks



# Six Key Decisions to Make in Building an EC Model



Decisions drive EC approach and should reflect company objectives

# Asking the Right Questions to Develop Appropriate EC Models

- For what purposes will EC be used?
- What risks will be reflected in EC?
- To what degree will the risks be integrated?
- What is the shape of the value distribution?
- How is the value distribution obtained?
- How will risk be attributed to transactions?

# What do Companies Require From an Economic Capital System?

## Use

Continuous solvency monitoring for rating and regulation

Economic profitability measurement by business and product

Pricing of existing and new business

ALM and risk management strategies

Strategic decision making; Mergers and Acquisitions

## Business Requirements

- Fully reflect the business, structure and risks
- Provide Economic Capital on a stand alone, combined and fully allocated basis, at multiple confidence levels and at multiple levels of granularity
- Generate appropriate management information for use in all appropriate business decisions
- Build upon the existing actuarial systems
- Include all insurance, banking and fund management business on a consistent basis
- Provide immediate updating and what-if analysis
- Be of a robust, enterprise standard

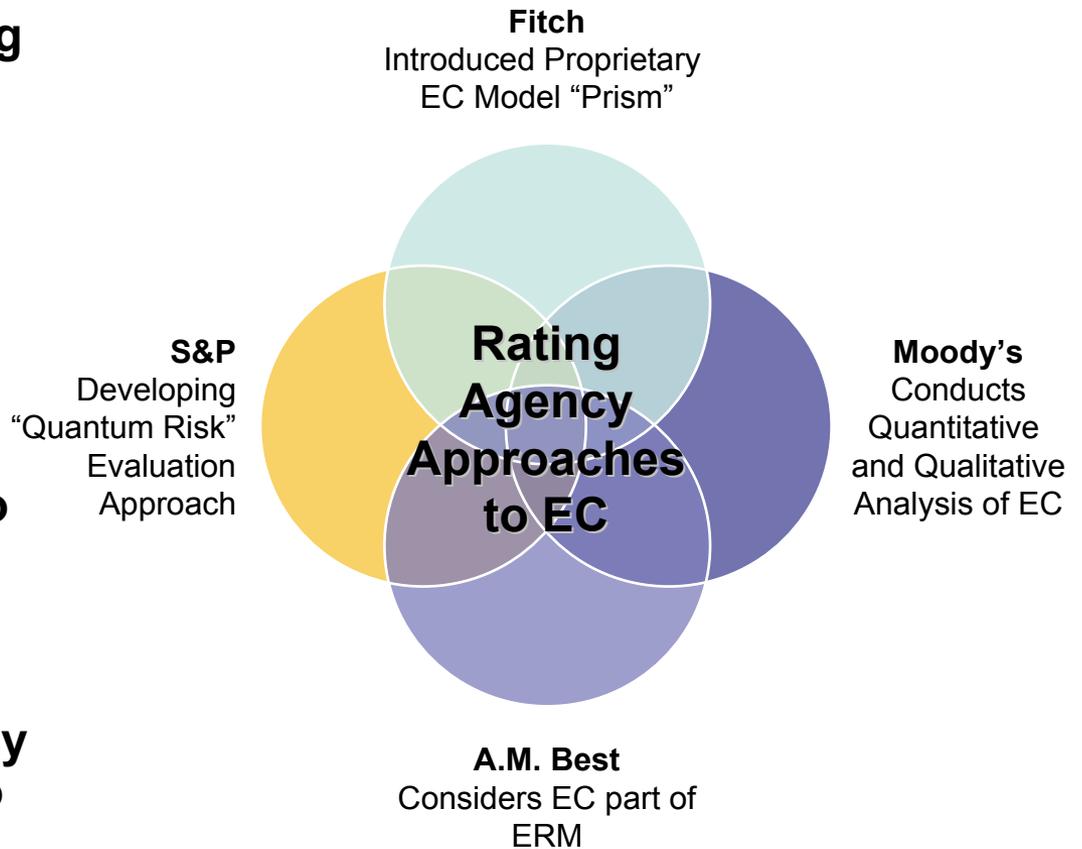
## Technical Requirements

- Allow for all non-fungibility constraints
- Allow for the tax implications of the group
- Reflect heavy-tailed distributions and allow for tail correlation
- Reflect the non-linearity and non-separability of losses
- Allow for and allocate diversification benefits
- Accept input from multiple systems in multiple forms
- Be flexible enough to allow for changes in business mix, legal structure and reporting requirements
- Allow distributed access

# Rating Agencies' Perspectives

# Rating Agencies' View of EC Have Changed

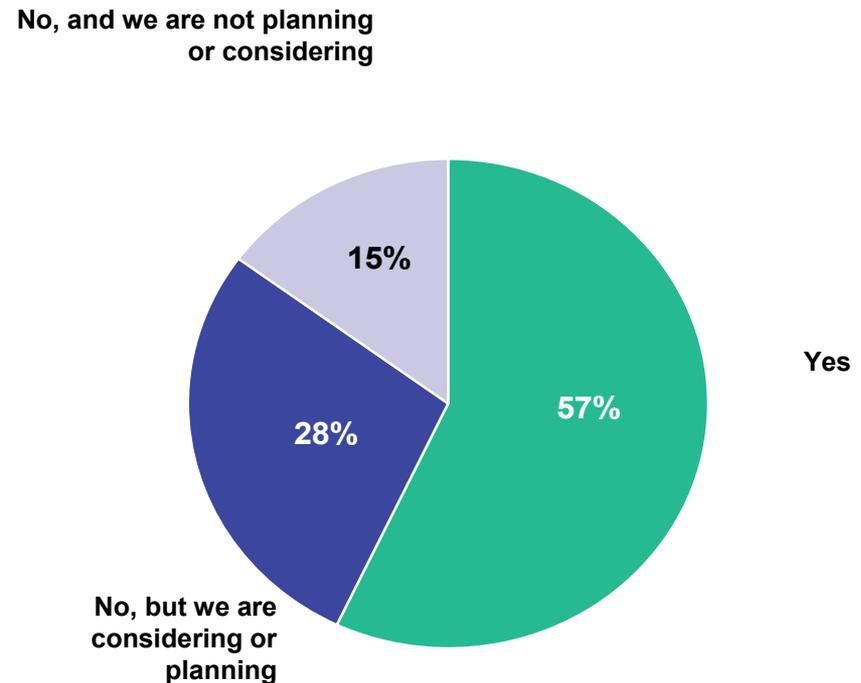
- Rating agencies are increasingly considering proprietary EC models when assessing capital adequacy
- Building economic models into their rating process during ERM reviews
- Expecting companies to demonstrate balance between qualitative and quantitative ERM
- Linking capital adequacy requirements directly to ratings



# Tillinghast ERM Survey

# EC: The Core Metric Used in an ERM Framework

- **57% of respondents are already calculating EC:**
  - Companies in the U.K. (87%), Bermuda (73%) and continental Europe (70%) have embraced calculating EC more than those in the U.S. (44%) and Canada (37%). Asia/Pacific (59%) lies between these extremes
  - Almost 85% of large companies and nearly 70% of medium-size companies calculate EC, whereas less than 40% of small companies do so
  - Multiline insurers (67%) and reinsurers (79%) are more likely to calculate EC compared to just over 50% of life and P/C companies

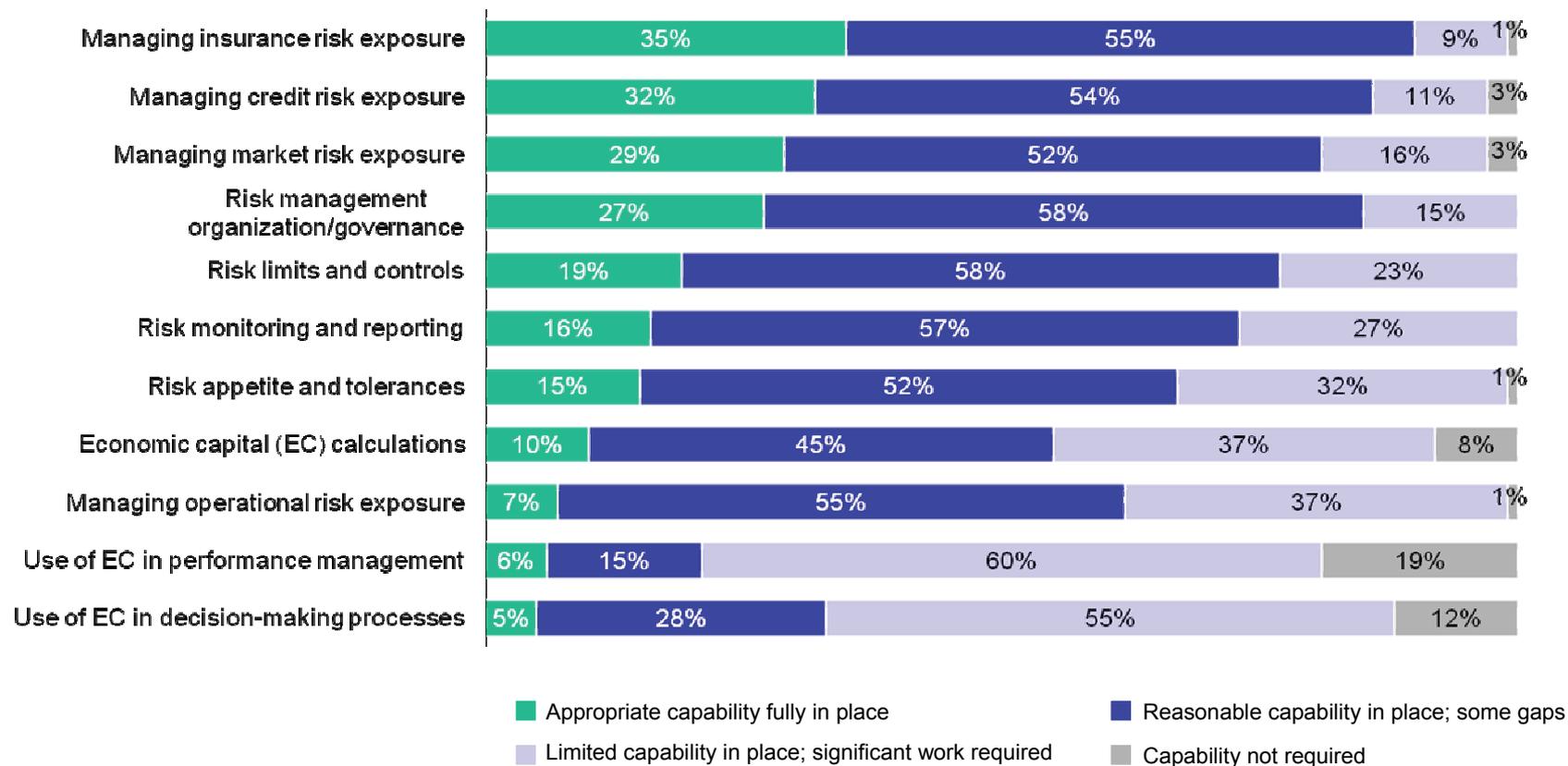


Source: Tillinghast ERM survey

# While Many ERM Components are Largely in Place, Significant Work is Required to Make Effective Use of Economic Capital

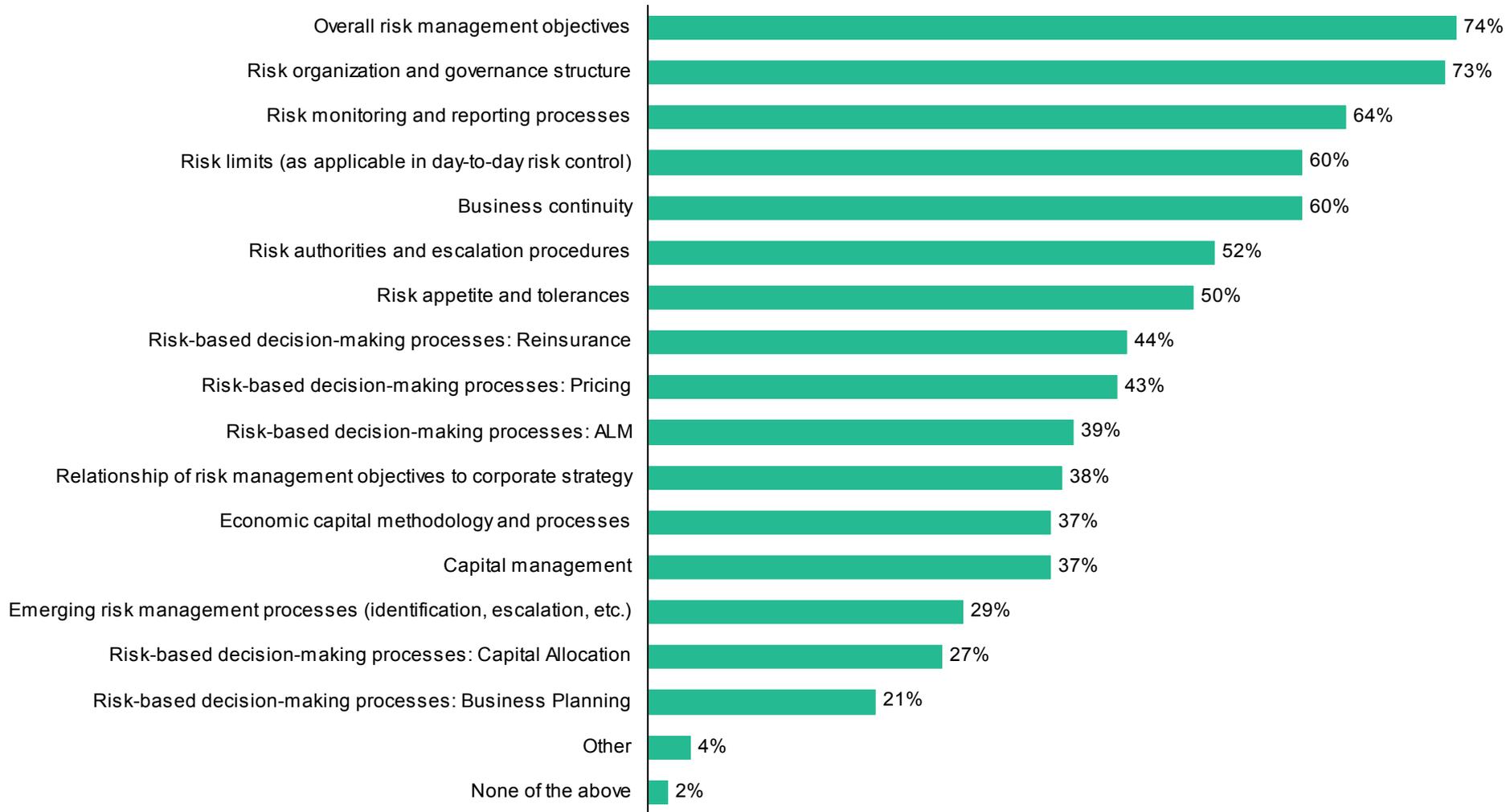
- European respondents are more comfortable with their EC calculation capabilities (71%) compared to respondents in North America (47%) and Asia/Pacific (49%)
- Companies are significantly less comfortable with managing operational risk exposures compared to insurance, credit and market risk exposures
- Despite the ongoing credit crisis, most companies are fairly comfortable with their capabilities around management of credit risk exposures

# While Many ERM Components are Largely in Place, Significant Work is Required to Make Effective Use of Economic Capital



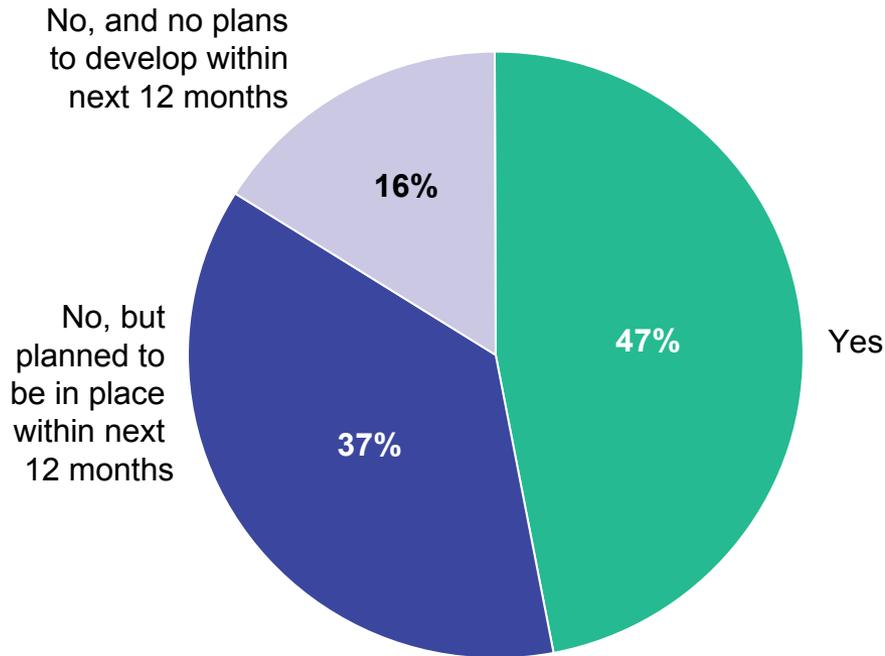
Base: Total Respondents for Q.3 How would you assess your current risk management capabilities in each of the following areas?  
Please select one level of capability for each area.

# Documentation of Risk Policies is More Extensive in the Areas of Governance and Risk Control Compared to EC and Risk-Based Decision Making



Base: Total Respondents for Q.9 For which of the following do you have clearly documented risk policies? Please select all that apply.

# Within 12 Months, 84% of Respondents Expect to Have a Documented Risk Appetite/Tolerance Statement in Place

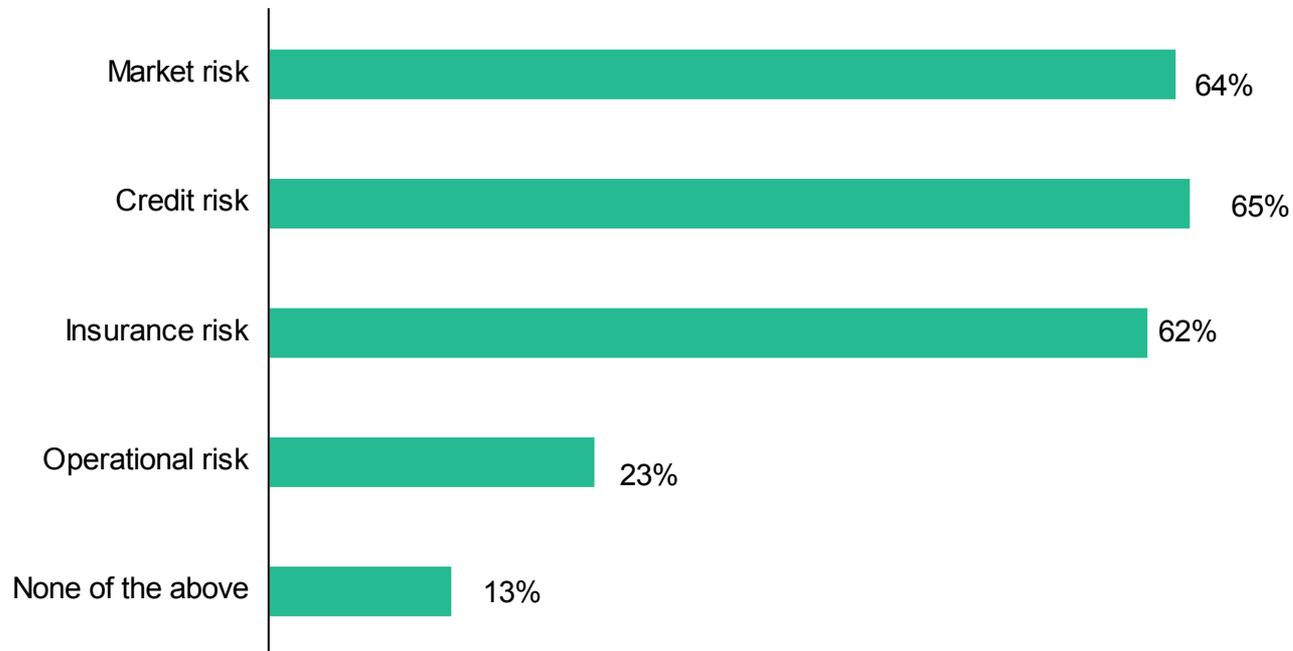


- The development of risk appetite/tolerance statements is less advanced among smaller companies

	In place	Planned within 12 months	Not planned
Small	34%	44%	22%
Medium and Large	57%	33%	10%

# The Majority of Companies Have Risk Limits for Their Major Risks, but Only 23% Have Limits Around Operational Risk

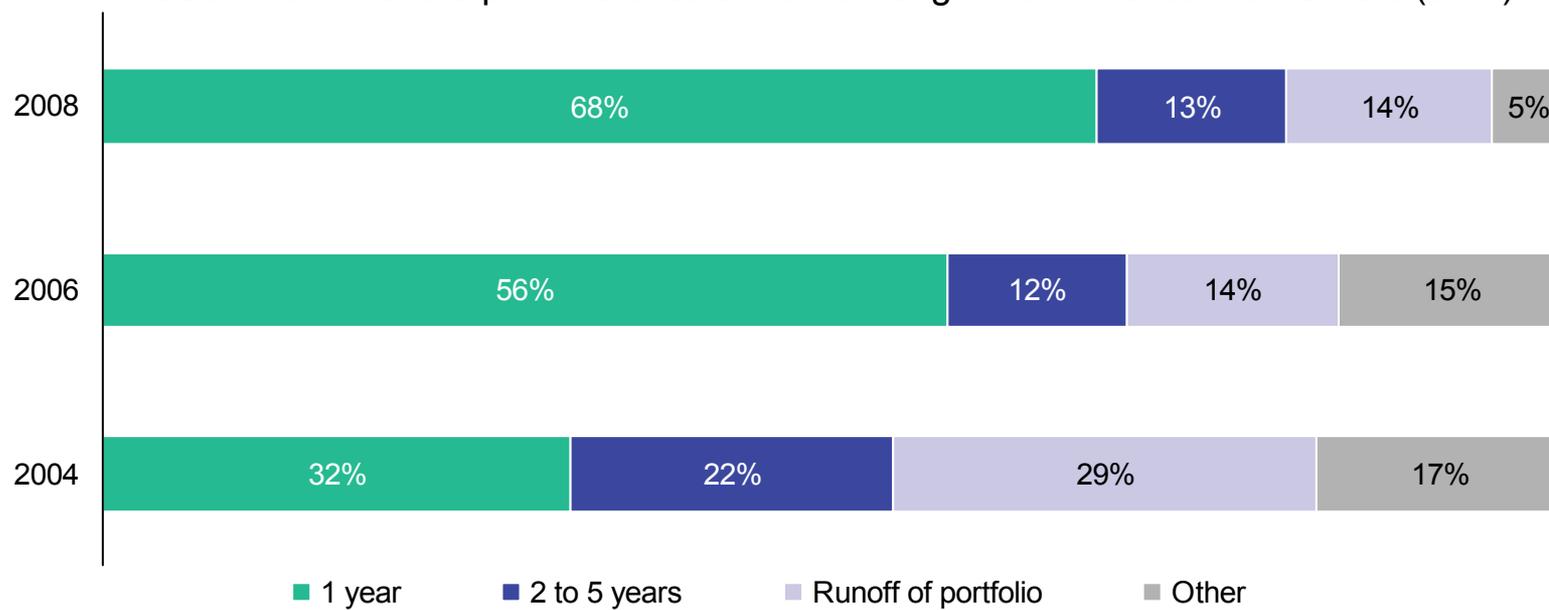
- In general, a higher percentage of European companies have set limits to govern risk taking than in North America. Asia/Pacific further lags North America in this respect
  - For example, credit risk: Europe 81% vs. North America 63% vs. Asia/Pacific 43%
- In Asia/Pacific, 29% of respondents indicate that their companies have not set limits for any of these risks (Japan 47%)



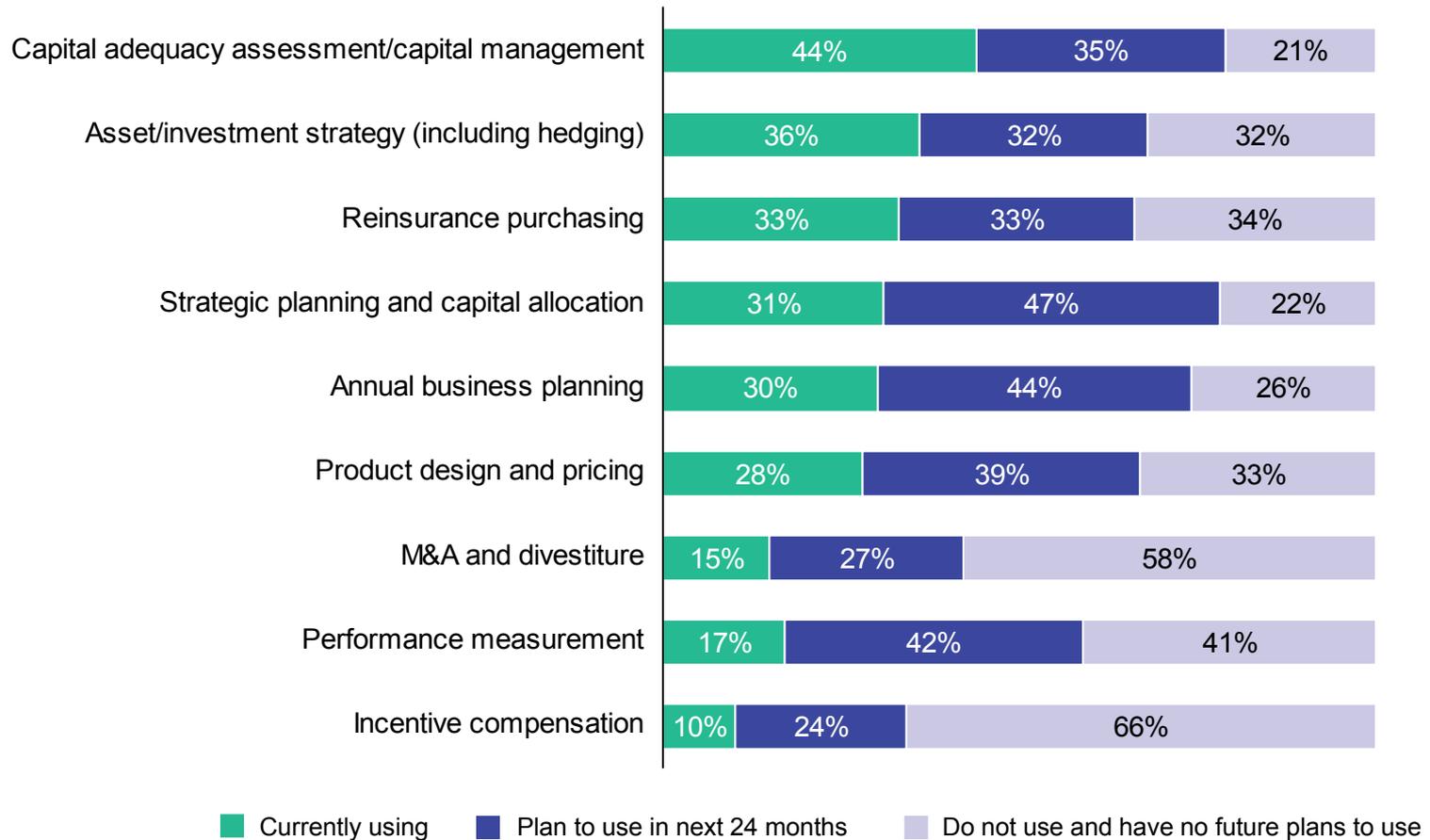
Base: Total respondents n=359 for Q.14 For which of the following types of risk have you set limits to govern day-to-day risk taking within the business? Please select all that apply.

# There is a Trend Toward Calculating EC Over a One-Year Risk Horizon

- **Use of a one-year horizon is most common:**
  - In Europe (79%) and Asia/Pacific (75%) vs. North America (57%)
  - Among multiline insurers (78%) vs. life (70%) and P/C (62%)
- **Use of a two- to five-year period and of the runoff of the portfolio have, however, remained relatively stable since 2004:**
  - Use of a two- to five-year period occurs most among North America P/C insurers (38%)
  - Use of runoff of the portfolio occurs most among North America life insurers (31%)



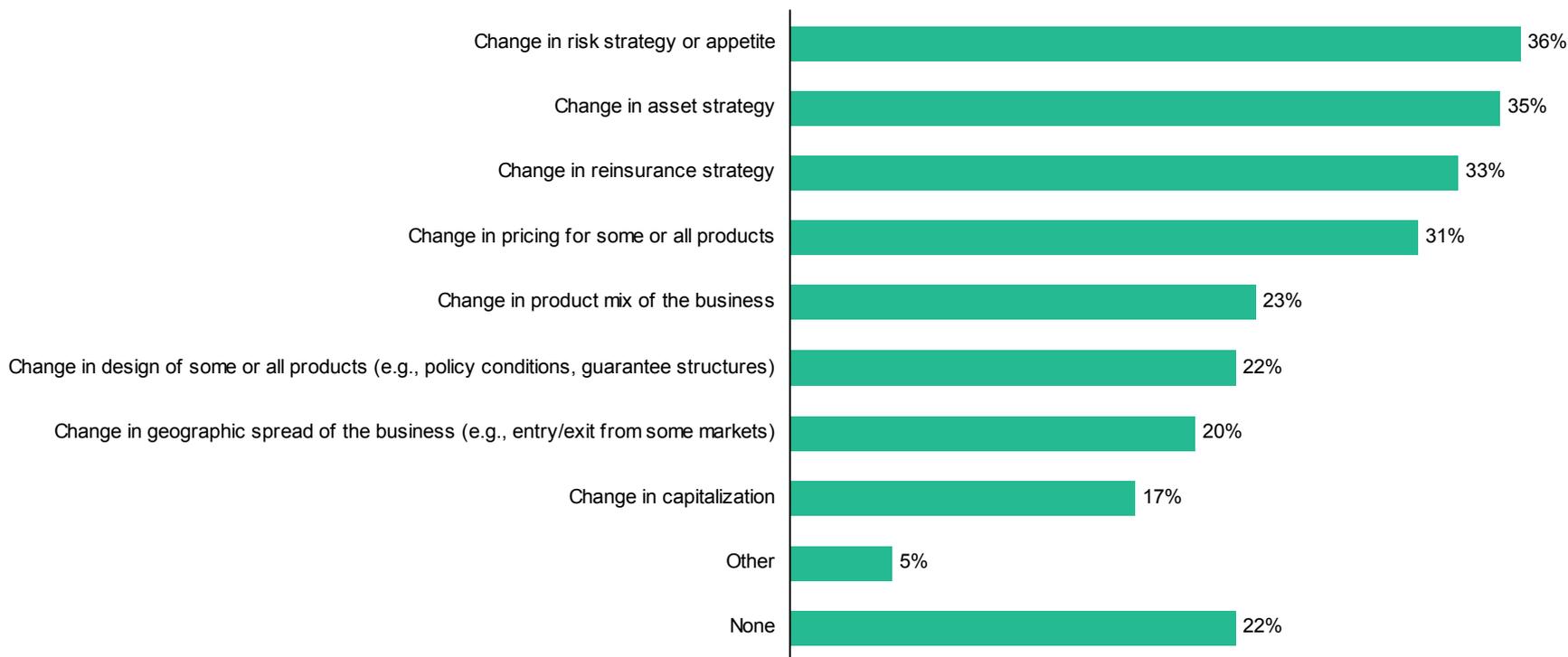
# Utilization of EC in Decision Making is Set to Change Dramatically Over the Next Two Years



Base: Total Respondents for Q.23 Do you currently use or plan to use Economic Capital in decision making for the following areas?  
Please select one response for each area.

# For Almost 80% of Respondents, Key Business Changes Have Resulted From Their ERM Activities in the Past Two Years

- In general, ERM programs have had greater influence in large companies than in smaller
- Particularly notable changes resulting from ERM programs have been:
  - For life companies, changes to asset strategy (43%)
  - For P/C companies, changes to reinsurance strategy (42%)
  - For reinsurers, changes to pricing (50%) and geographic spread (44%)



Base: Total Respondents for Q.25 Over the past two years, what key business changes have resulted from your ERM program? Please select all that apply.

# **ERM and the Recent Financial Crisis**

# What Failed? ERM Concept OR Management?

- **There have been weaknesses and some failures in the execution of ERM**
  - Modeling risk is high sensitivity to assumptions – BUT are the right assumptions used?
  - Extreme tail is not fully appreciated - attitude of can't possibly happen
  - In some cases, risk managers recognized risk-related deficiencies but were ignored by senior management
  - In ERM, corporate culture is everything, if senior management doesn't buy in, ERM is of little or no value
  - Risk management is more critical than ever
  - ERM as a concept has not failed

# **EC and Reinsurance**

# Reinsurance is Used Throughout the World to Manage Business Based on EC

- To define a company's risk appetite and risk transfer objectives
- To reduce risk and volatility
- To provide a competitive alternative to debt or capital financing
- **Examples:**
  - USA: Financing redundant reserves (XXX term business)
  - Canada: Supporting mortality improvement assumptions
  - UK: Unlocking embedded value
  - Japan: Providing new business surplus relief

# EC and Japan

# While Interest in Managing Business Using EC Concepts is Growing, Regulatory Changes May Accelerate this Process

- FSA is increasing solvency standards: target capital factors are increasing in March 2012
- FSA has also announced the long term intention to move to EC
- Implications?
  - In Canada, EC was practiced by larger companies but wider use of EC only emerged after strong push from regulator (OSFI)
  - Experience suggests that moving to an EC framework is a significant commitment, perhaps companies in Japan should begin making plans to implement EC now.
  - One key area of EC focus would be ALM, where Japanese insurance industry has not managed ALM risk very effectively.

# Conclusion

# **EC Will Grow in Importance, Increasingly Becoming a Differentiator for Success in the Marketplace**

- **EC is growing in importance**
  - The majority of large domestic and multinational insurance companies are planning and implementing EC
- **EC is a key metric within an ERM framework**
  - EC is important to each company in today's complex environment
  - Rating agencies, as well, are increasing their focus on EC

# **EC Will Grow in Importance, Increasingly Becoming a Differentiator for Success in the Marketplace**

- **EC represents a considerable undertaking**
  - It requires analysis before and during implementation
  - Companies need to get started quickly while maintaining a holistic approach to risk management
- **EC provides key ERM measurement data for**
  - EC management
  - Leveraging throughout the enterprise in decision making about pricing, acquisitions, hedging and managing tail risk

# Questions

