



International Association for the
Study of Insurance Economics

Études et Dossiers

Études et Dossiers No. 337

**The Insurance Industry and Enterprise
Risk Management: From Compliance to
Value Creation**

21 November 2007

Milan

&

Uninsured Industrial Risks

Ongoing Research Project
by Tileman Fischer

December 2007

Working Paper Series of
The Geneva Association

© Association Internationale pour l'Etude de l'Economie de l'Assurance

The Geneva Association Working Paper Series “Études et Dossiers” appear at irregular intervals about 10 - 12 times per year. Distribution is limited.

The “Études et Dossiers” are the working paper series of The Geneva Association. These documents present intermediary or final results of conference proceedings, special reports and research done by The Geneva Association. As they contain work in progress or summaries of conference presentations, the material must not be cited without the express consent of the author in question.

Layout & Distribution: Valéria Kozakova

The Insurance Industry and Enterprise Risk Management: from Compliance to Value Creation

Bruno Porro

Agenda

- Important Changes in the Insurance Environment
- Evolution of Risk Management
- Risk Landscape: Impact on Balance Sheet and P&L
- Solvency II: Risk Management
- Solvency II: Valuation Principles for Assets and Liabilities
- Chief Risk Officer Function and Role

Important Changes in the Insurance Environment

- Law of Large Numbers
- Legal Framework
- Accounting
- Regulation (FSA, SST, Solvency II)
- Rating Agencies
- Investor Community
- Internationalisation/Globalisation
- Capital Markets

3

Evolution of Risk Management

Phase 1:
Management of
individual risks

Phase 2:
Managing “Silos of
Risk” independently
(Assets, products,
technical reserves etc.)

(today: Risk Engineering
Services)

Phase 3:
Managing all risks in
combination (ERM)

4

Risks Present in the Insurance Activity (not exhaustive)

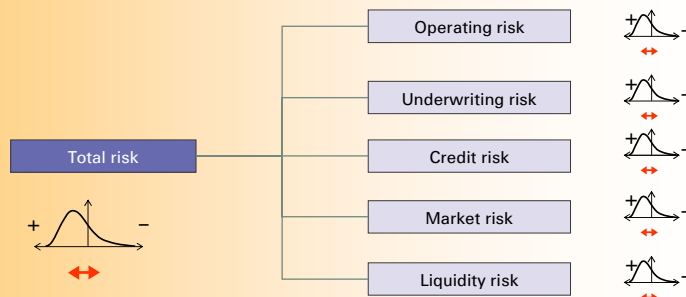
Risk category	Key risk factors	Key sources of exposure
Property & Casualty	natural catastrophes terrorist attacks liability events aviation disasters	property contracts casualty contracts special lines contracts securitizations external retrocessions
Life & Health	mortality morbidity lapse	life contracts health contracts structured reinsurance contracts securitizations external retrocessions
Credit & Financial Market	credit default and migration equity prices real estate prices interest rates credit spreads foreign exchange rates commodity prices inflation	credit and surety contracts structured financial contracts reinsurance recoverables securitizations investments derivatives replicating portfolios ^a
Capital & Liquidity		intra-group transactions external funding arrangements
Operational	other operational losses	processes people systems infrastructure

ERM (Phase 3): What does it mean (1)?

- Integrated view on all activities of the group, for all Risk factors
- Capital required for business is calculated with the help of sophisticated internal models
- Credit risks play a much more prominent role, including the placement of reinsurance/retrocession!
- Blurring of risk-management and capital-management due to requirements of supervisory authorities and rating agencies (capital can support risk, risk mitigation can reduce capital requirements)

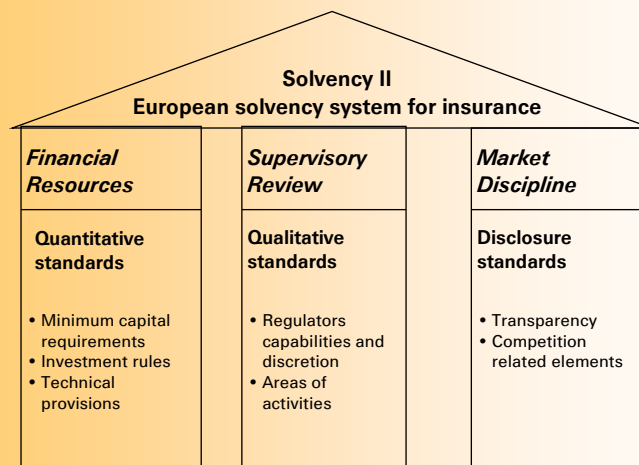
ERM (Phase 3): What does it mean (2)?

- Aggregation of all risks into one single group wide risk distribution
- Taking interdependencies between assets and liabilities (ALM) into account in the modelling of total risk



7

Solvency II Framework



8

Solvency II Draft Directive (1)

Article 41: General governance requirements.

3. Insurance and reinsurance undertakings shall have written **policies in relation to at least risk management**, internal control, internal audit, and, where relevant, outsourcing. They shall ensure that those policies are implemented.

9

Solvency II Draft Directive (2)

Article 43: Risk Management

1. Insurance and reinsurance undertakings **shall have in place an effective risk management system** comprising strategies, processes and reporting procedures necessary to monitor, manage and report, on a continuous basis the risks, on an individual and aggregated level, to which they are or could be exposed, and their interdependencies

That risk management system shall be well integrated into the organisational structure of the insurance or reinsurance undertaking. It shall contain contingency plans.

10

Solvency II Draft Directive (3)

Article 43: Risk Management

5. For insurance and reinsurance undertakings using a **partial or full internal model** approved in accordance with Art. 109 and 110 the risk management function shall cover the following additional risks:

- (a) to design and implement the internal model
- (b) to test and validate the internal model
- (c) to document the internal model and any subsequent changes made to it
- (d) to inform the administrative or management body..
- (e) to analyse the performance of the internal model and to produce summary reports thereof

11

Solvency II Draft Directive (4)

Economic Valuation Principles for Assets and Liabilities (Art 74 ff):

- Use market values, where they exist
- Use financial instruments, where risks have no market value, but can be hedged
- Use best estimate value plus a risk margin, where hedging is not possible (insurance liabilities)

This means:

- Value embedded options and guarantees (mainly in life products)
- No hidden reserves in assets and liabilities, no goodwill
- Use discounting to arrive at economic value (time value of money)

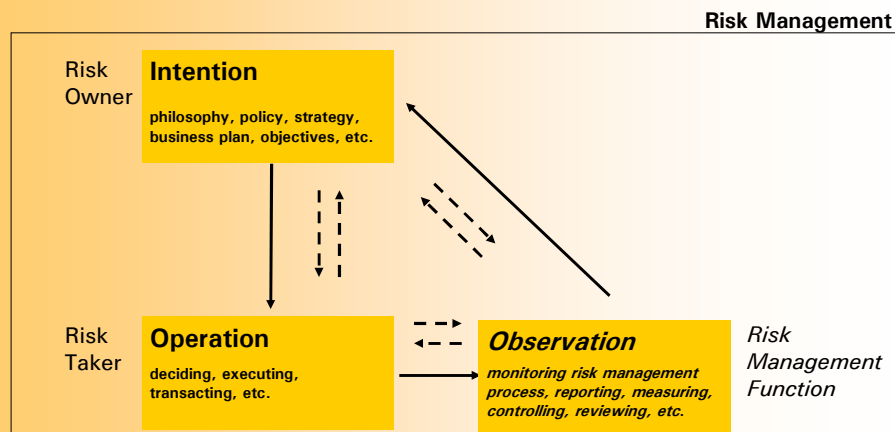
12

**Chief Risk Officer: Function and Role
(Example)**

Role	Description	Overall responsibility
Risk Owner	Establish objectives and delegate authority within specified bounds	Board of Directors, Executive Committee
Risk taker	Execute decision making on behalf of risk owner within the authority delegated	Business and corporate units
Risk controller	Oversee the activities of the risk taker on behalf of the risk owner	Risk Management
Board assurance	Provide the Board of Directors with independent assurance	Group Internal Audit

13

Function and Role of the CRO



14

Task List of CRO Function (Example)

- Independent view, reports directly to CEO and can veto decisions to risk management committee of the Board of Directors.
- Maintains formal or informal networks with all organisational units performing risk management tasks: internal and external audit, compliance, business continuity management, product management; pricing, valuation and reserve actuary; facility management and IT security etc.
- Is one of the discussion partners with supervisors, rating agencies, investor community with regard to capital and risk management
- Maintains a laundry list of emerging risks

15

Task List of CRO Function (Example)

- Is responsible for the internal model, its implementation, and interpretation of results
- Chairs the risk committee (agenda setting and follow up)
- Supervises risk mitigation (reinsurance) within and external to the group as part of risk and capital management
- Transforms statutory into economic balance sheet
- Independent risk assessment of large transactions (tailor-made products, as well as also M&A)
- Sets the mindset with regard to risk-understanding in the group

16