

EU Solvency II – a non-life perspective

CAS Spring Meeting

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"Solvency II will be the crown jewel of the European Union"

Alessandro Iuppa

President, NAIC

Chair, IAIS

at the EU Commission's public hearing in June 2006

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Contents

- **The background to the Solvency system within EU**
- A brief presentation of the Solvency II project and other issues

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EU Solvency background

1950-1960s:

early work by **Campagne**, OECD, CEA etc
Pentikäinen, Finland: equalization reserves
– risk theory

1970s:

- **compromises**
- 1973: 1st non-life insurance directive
- 1979: 1st life insurance directive

1980s-1990s:

2nd (1988) and 3rd (1992) insurance directives:
introducing **freedom of services** with **home country control** and the **single-license** concept.

1991: Insurance Accounting Directive, IAD

1998: Insurance Groups Directive, IGD

2002: Financial Conglomerates Directive, FCD

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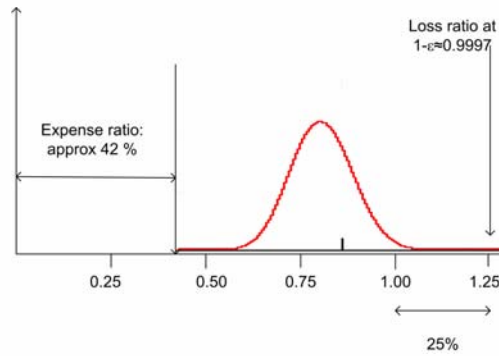
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**EU Solvency background –
Campagne's work during the 50s and early 60s**

Non-life approach:

Used the combined ratio:

- **Expense ratio** = constant, and equal to 42% (0.42)
- **Loss ratio** follows a beta distribution, based on European data: at 0.9997 percentile the ratio is approx. 83% (0.83)
- **Combined ratio** = 42% + 83% = 125% (1.25)
- The company needs approx **25%** of the premium income as an extra buffer!



The probability of ruin over 3 years is approx 1/1000!

**EU Solvency background –
Compromises during the 60s and 70s**

| OECD study commission proposed | European compromise for the 1st non-life directive |
|-------------------------------------|--|
| 24% of <u>gross premium</u> written | The highest of 18% of <u>gross premiums</u> (< 10 million units); else 16% |
| 34% of <u>incurred claims</u> | 26% of gross average <u>incurred claims</u> (< 7 million units); else 23% |
| 19% of <u>technical reserves</u> | -- |

EU Solvency background

1980s

Solvency research done in e.g. Finland, UK and Norway

1986/1988

1st/2nd Int. Conf. on Insurance Solvency

1990s-2000s:

Risk-based capital systems introduced in US, Canada, Japan, Australia and Singapore

EU:

1994: a solvency review →

1997: the Müller report:

* the system has proved itself


* there is no reason to totally revise it

→ minor changes → Solvency I (2002)

→ the Solvency II project

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The first decade - EU Solvency background

The first decade, 2000:

new systems proposed and introduced in, for example, Denmark, the Netherlands, Sweden, Switzerland, UK.

IAIS and IAA work on solvency

IASB work on accounting (insurance contracts)

EU – Solvency II:

2000-2003 – phase I:

the learning phase

2003-2007 – phase II:

the framework directive phase

2007-2010/12 – phase III:

the implementing phase

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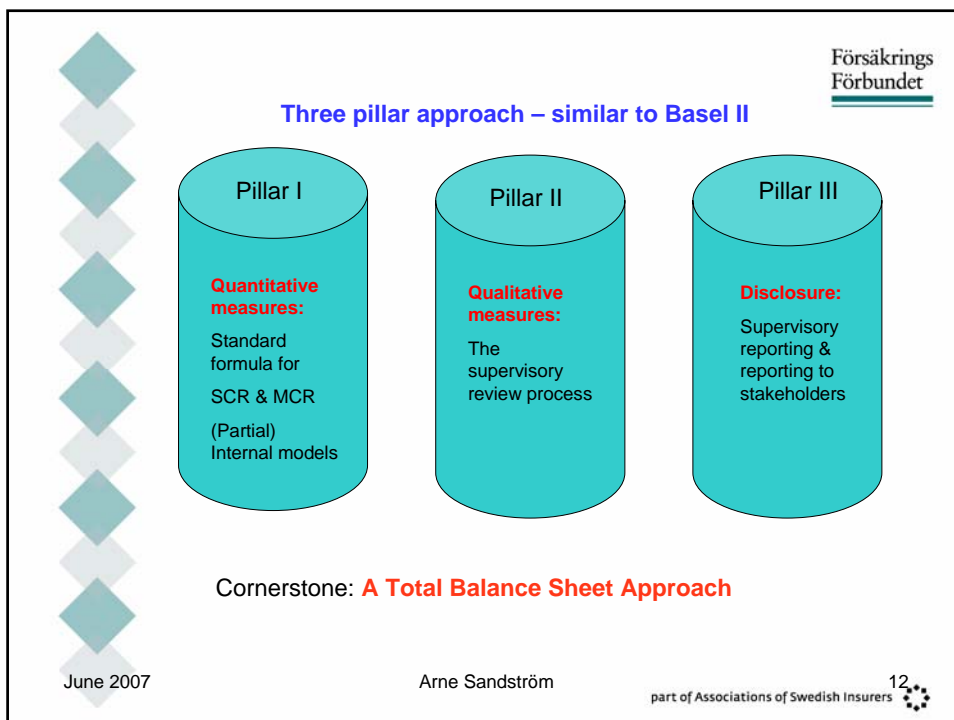
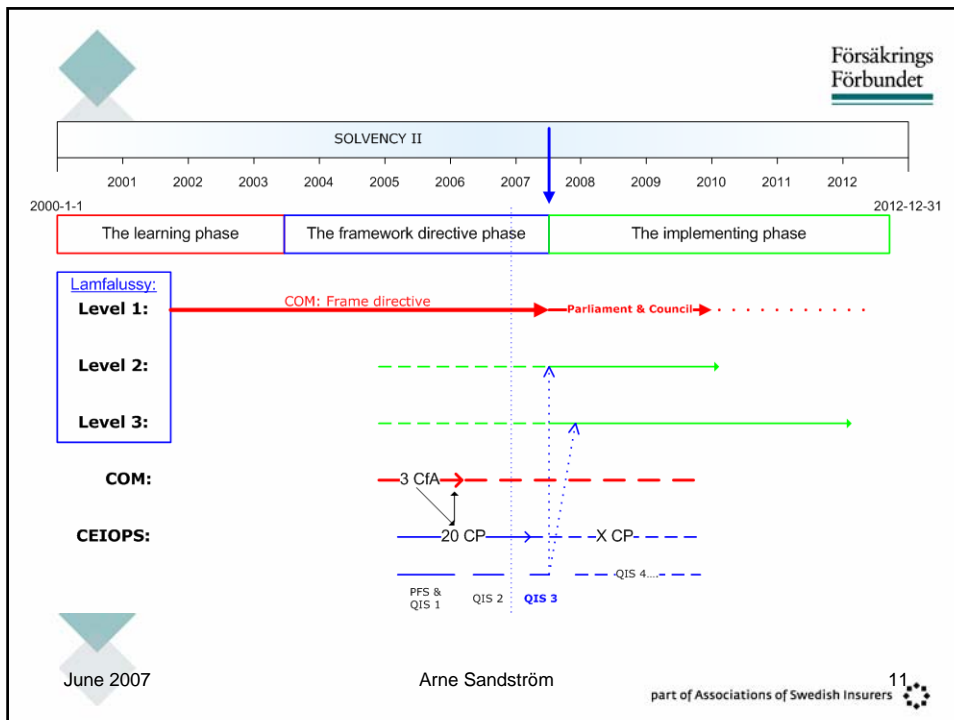
Lamfalussy procedure – comotology, a four-level approach:

- Level 1:** The European Commission, COM, adopts a proposal for a *framework directive* → 2-3 years adopting procedure within Council and parliament
- Level 2:** Level 2 committee - *regulators*: EIOPC, European Insurance and Occupational Pension Committee; “*detail directives*” → 3 month adopting procedure for COM
- Level 3:** Level 3 committee - *supervisors*: CEIOPS, Committee of European Insurance and Occupational Pensions Supervisors; *guidelines & standards*
- Level 4:** COM checks the member states' compliance with the EU legislation and may take legal action.

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Investments

Prudent person rule

“No arbitrary restrictions on investments”

Valuation

Assets & Liabilities: market consistent

“Liabilities” = technical provisions + “other liabilities”

Technical provision calculated on a current exit¹⁾ value basis

Hedgeable risks: market consistent valuation

Non-hedgeable risks: Best estimate²⁾ + Risk margin (**Cost-of-capital**)

1) “cost of fulfilling obligations” (IASB)

2) In IAA and IAIS terminology: **Current estimate**

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Valuation

Hedging: “activities designed to reduce the risks imposed by other activities”

Two main building blocks in Solvency II:
- the valuation of technical liabilities and
- The determination of capital requirements

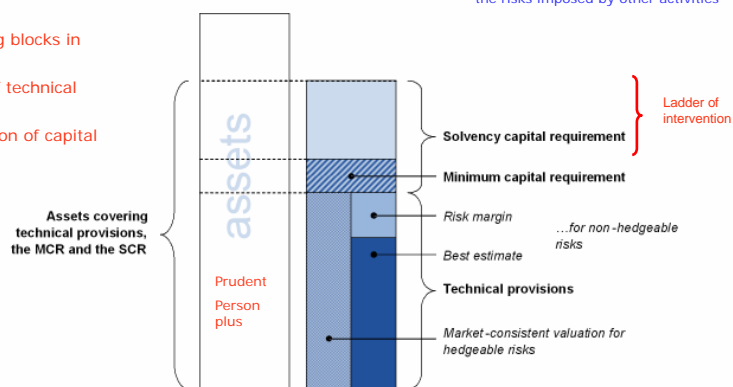


Figure (Source: CP 20, p. 9)

2.2 Pillar 1 is made up of a number of different elements that, in combination, should provide a structured means of assessing whether the insurer has adequate financial resources for the risk it carries.

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Other issues

- **Segmentation:** *e.g. lines of business*
- **Risk mitigation:** *financial hedging, reinsurance etc*
- **Group solvency**
- A robust system of **governance**, e.g.
 - **Organizational structure**
 - **Fit & proper** requirements on persons
- A **risk management** system, e.g.
 - Strategies, processes & reporting procedures
 - Own risk and solvency assessment (ORSA)
- Actuarial function
- Disclosure (IASB/IFRS)

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Pillar I: SCR

SCR - Standard formula

- a **modular approach**
- **risk modules**, at least:
 - Non-life underwriting risk
 - Life underwriting risk
 - Health underwriting risk (special)
 - Market risk
 - Credit risk (incl spread and counterparty default risk)
 - Operational risk
- **risk charges:** factor based or stress tested

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Pillar I: SCR

- **risk measure:** VaR
 - but possible to use other measures such as TailVaR in Internal Models
- **confidence level:** 99,5% using VaR
- **time horizon** of the solvency assessment:
 - a time horizon of one year for the capital requirement
- **aggregation:** linear correlation ("tail correlation")

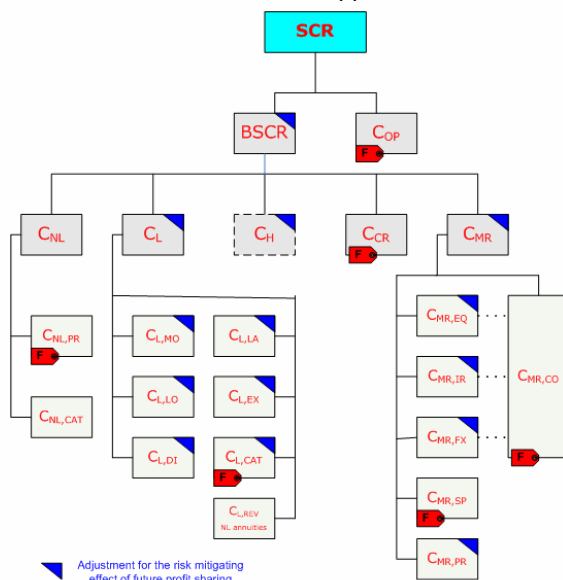
$$BSCR^2 = \sum_i \sum_j \rho_{ij} C_i C_j$$

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Standard formula - a modular approach



Adjustment for the risk mitigating effect of future profit sharing
 Factor-based calculation; otherwise stress- or shocktested

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Pillar I: SCR – standard formula based on QIS 3

$$SCR = BSCR + C_{OP}$$

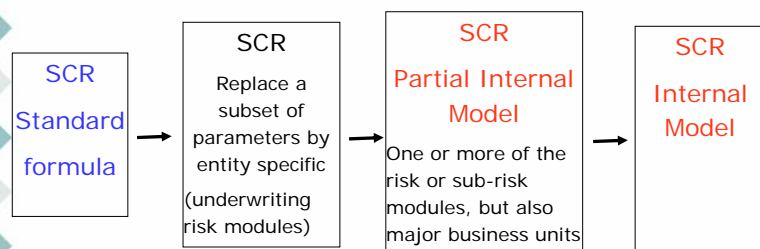
- $BSCR$ = Basic SCR
- C_{OP} = Operational risk

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Pillar I: SCR
Standard formula → Internal model



Internal models:
- Use test
- Statistical quality standards

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Pillar I: MCR –minimum capital requirement

- QIS 3: a “simplified” modular approach with an absolute floor (AMCR)
- The European insurance industry want to have a “compact approach” tested, i.e. a percentage of SCR:
MCR = x%SCR
 - (for transitional arrangements the following information should be disclosed: MCR = (1/3)*SCR)

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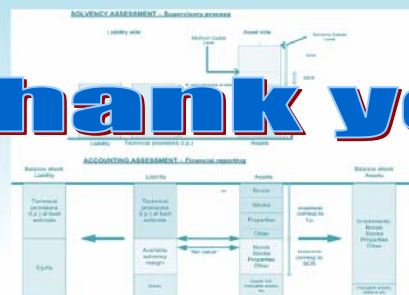
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Solvency

Models, Assessment and Regulation

Thank you



Arne Sandström

 Chapman & Hall/CRC
Taylor & Francis Group

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