



International Association for the
Study of Insurance Economics

Études et Dossiers

Extract from

Etudes et Dossiers No. 324

**3rd International Insurance and Finance
Seminar of The Geneva Association**

Hosted by Lloyd's of London

7 – 8 December 2006
London

March 2007

Working Paper Series of The Geneva Association

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

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Layout & Distribution: Valéria Kozakova


The Investment World of a Reinsurer - Operating under Multiple Constraints

Guido Fürer

Swiss Re


Agenda

- Economic view
 - The economic balance sheet
 - Asset and liability management in practice
- Company targets and constraints
 - Rating Agency view
 - Regulatory view
- Summary



The economic balance sheet Economic net worth


It all starts with the internal economic view...

Economic balance sheet		=	Economic balance sheet	
Market value of assets	Economic value of insurance liabilities		Market value of assets	Market value of replicating portfolio
	Debt		Debt	
	Economic net worth			Economic net worth

Replicating portfolio = combination of tradeable instruments whose cash flows match best liability cash flows as well as expenses, taxes and capital costs

Economic value of liabilities = market value of replicating portfolio

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ALM in practice Liability-driven investing

Economic balance sheet			
Assets	Liabilities		Economic net worth

Investment business

Assets	Investment benchmark
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Strategic balance sheet


Investment benchmark	Replicating portfolio	Economic net worth
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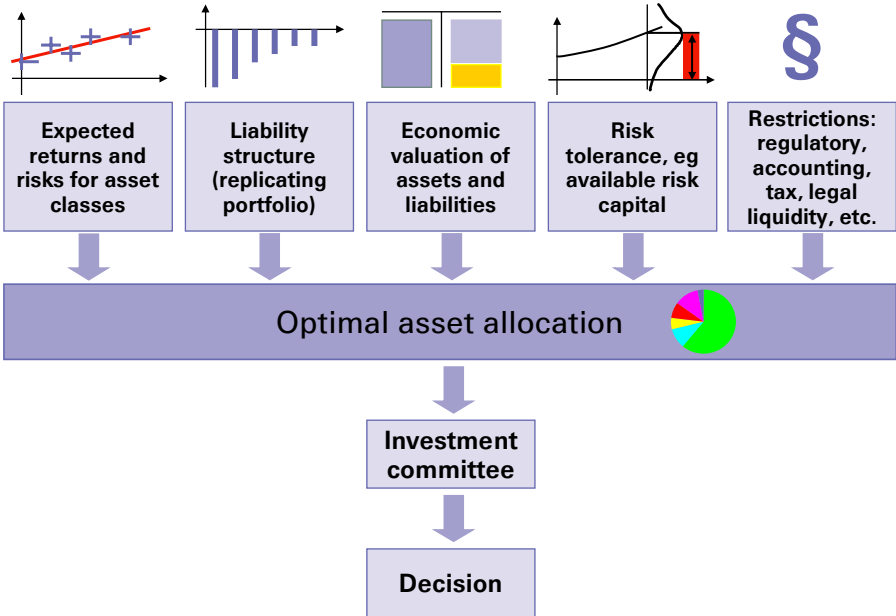
Insurance business


Replicating portfolio	Liabilities
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- Separation of insurance operations and investment operations

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	<p style="text-align: right;">Swiss Re </p> <h2 style="text-align: center;">ALM in practice Investment benchmark</h2>
<p>Does the investment benchmark capture all liability risks?</p> <p><small>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re Page 5</small></p>	<ul style="list-style-type: none"> ■ The investment benchmark derived for the asset management operation is <i>not</i> a traditional benchmark <ul style="list-style-type: none"> - The benchmark represents a minimum risk portfolio and - Economic net worth is managed on an absolute return approach ■ Exposure and/or risk limits must be set in order to control the deviation from the investment benchmark <ul style="list-style-type: none"> - Interest rate mismatch (duration, convexity, etc) - Credit spreads - FX mismatch - Equities - Real estate and alternative investments ■ The investment benchmark is an important capacity and risk steering tool

	<p style="text-align: right;">Swiss Re </p> <h2 style="text-align: center;">ALM in practice Optimal asset allocation I</h2>
<p><small>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re Page 6</small></p>	 <p>The flowchart illustrates the process of optimal asset allocation. It starts with five input boxes at the top, each with a representative icon: 'Expected returns and risks for asset classes' (line graph with '+' signs), 'Liability structure (replicating portfolio)' (bar chart), 'Economic valuation of assets and liabilities' (stacked bar chart), 'Risk tolerance, eg available risk capital' (bell curve), and 'Restrictions: regulatory, accounting, tax, legal liquidity, etc.' (paragraph symbol). Arrows from these boxes point to a central box labeled 'Optimal asset allocation' which contains a pie chart. Below this central box, an arrow points to 'Investment committee', which in turn points to 'Decision'.</p>



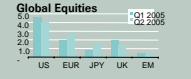
ALM in practice Optimal asset allocation II

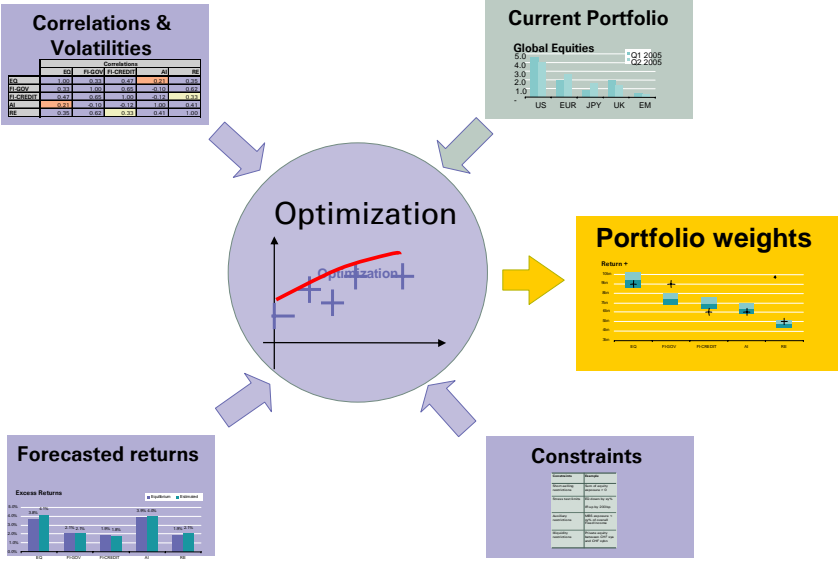
Correlations & Volatilities

	EQ	FLGOV	FLCORPOR	AI	RE
EQ	1.00	0.19	0.14	0.14	0.14
FLGOV	-0.33	1.00	-0.25	-0.12	0.23
FLCORPOR	0.14	0.08	1.00	0.12	0.14
AI	-0.24	-0.13	-0.12	1.00	0.61
RE	0.24	0.23	0.14	0.61	1.00

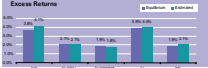
Current Portfolio

Global Equities

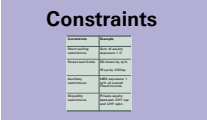




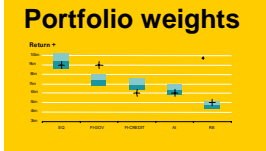
Forecasted returns



Constraints




Portfolio weights



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ALM in practice Risk limits and measurement


- The **major goals** of setting risk limits are
 - the protection of capital and
 - the lowering of earnings volatility
- **Different risk metrics** are adequate to reach the different goals
 - protection of capital → shortfall / stress test limits
 - lower earnings volatility → VaR limit
- An **integrated risk model** is needed to understand how risks accumulate and diversify, and to measure the risk metrics
- Risk measuring and controlling is done on a **daily basis**, but framework needed is not established in a day...


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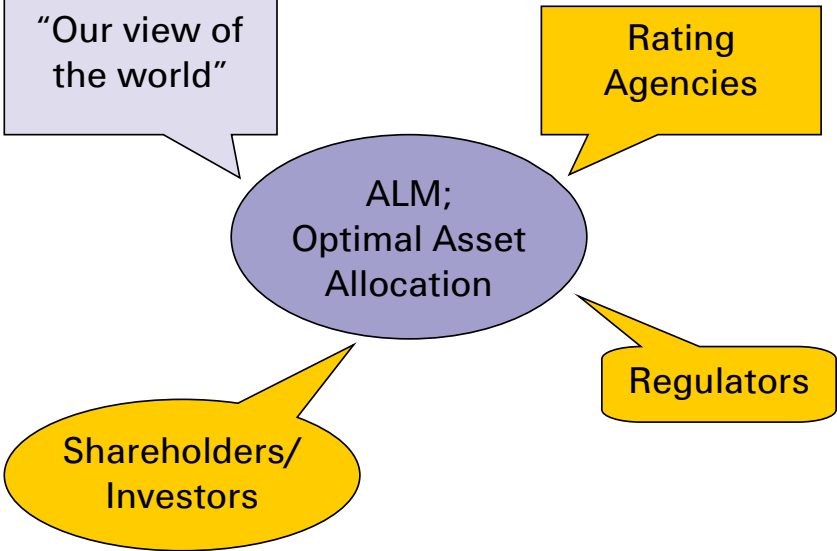
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Swiss Re 	ALM in practice Summary
<p>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re Page 9</p>	<ul style="list-style-type: none"> ■ ALM must be based on an economic view but maybe subject to other constraints ■ Separation of underwriting and investment activities ■ Investment benchmark and risk limits are part of a transparent and efficient ALM process ■ Risk capacity for investment risks depends on underwriting risks ■ ALM must be embedded in an integrated enterprise-wide risk management ■ ALM is a process with defined limits, controls and decisions

Swiss Re 	Company targets and constraints Overview									
<p>■ Operating within a web of various constraints</p> <p>■ Balancing internal economic value management and external target matrix</p> <p>■ Capital Adequacy to be strong based on each of the different measures</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #c6c8ca; text-align: center; vertical-align: middle;">External Reporting / Market View</td> <td style="background-color: #f1c40f; text-align: center;">Financial Result</td> <td style="background-color: #9b9b9b; text-align: center;">Capital Adequacy</td> </tr> <tr> <td style="background-color: #c6c8ca; text-align: center; vertical-align: middle;">Economic Perspective</td> <td style="background-color: #f1c40f; text-align: center;">EPS growth target ROE target</td> <td style="background-color: #9b9b9b; text-align: center;">Rating Agency View Regulatory View</td> </tr> <tr> <td style="background-color: #c6c8ca; text-align: center; vertical-align: middle;">Economic Perspective</td> <td style="background-color: #f1c40f; text-align: center;">Economic Value Management</td> <td style="background-color: #9b9b9b; text-align: center;">Internal Capital Adequacy View</td> </tr> </table>	External Reporting / Market View	Financial Result	Capital Adequacy	Economic Perspective	EPS growth target ROE target	Rating Agency View Regulatory View	Economic Perspective	Economic Value Management	Internal Capital Adequacy View
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<p>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re Page 10</p>										

Swiss Re 																											
Rating agency view Capital adequacy																											
<p>...but various constraints come into play later on.</p> <p>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re</p> <p>Page 11</p>	<div style="float: right; text-align: right;"> Rating Criteria (S&P) </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Industry risk</td></tr> <tr><td>Competitive position</td></tr> <tr><td>Management and corporate strategy</td></tr> <tr><td>Operating performance</td></tr> <tr><td>Capitalization</td></tr> <tr style="background-color: #4F81BD; color: white;"><td>Investments</td></tr> <tr style="background-color: #4F81BD; color: white;"><td>- portfolio diversification, credit quality and liquidity</td></tr> <tr style="background-color: #4F81BD; color: white;"><td>- investment returns</td></tr> <tr style="background-color: #4F81BD; color: white;"><td>- asset/liability management</td></tr> <tr><td>Liquidity</td></tr> <tr><td>Financial flexibility</td></tr> <tr><td>Enterprise Risk Management</td></tr> </table> <div style="float: right; text-align: right; margin-top: 10px;"> Capital Adequacy Ratio "CAR" (S&P) </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Total adjusted capital</td><td>TAC</td></tr> <tr style="border: 2px solid red;"><td>- Investment risk</td><td>C1</td></tr> <tr><td>- Other credit risk</td><td>C2</td></tr> <tr><td>- Non-Insurance risk</td><td>C3</td></tr> </table> <p style="text-align: center; margin-top: 10px;">CAR =</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Non-life premium risk</td><td>C4</td></tr> <tr><td>+ Non-life reserve risk</td><td>C5</td></tr> <tr><td>+ Life risk</td><td>C6</td></tr> </table>	Industry risk	Competitive position	Management and corporate strategy	Operating performance	Capitalization	Investments	- portfolio diversification, credit quality and liquidity	- investment returns	- asset/liability management	Liquidity	Financial flexibility	Enterprise Risk Management	Total adjusted capital	TAC	- Investment risk	C1	- Other credit risk	C2	- Non-Insurance risk	C3	Non-life premium risk	C4	+ Non-life reserve risk	C5	+ Life risk	C6
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Swiss Re 	
Regulatory view Solvency II, SST	
<p>Is it compliant with the internal capital adequacy view?</p> <p>...and not to forget the accounting view!</p> <p>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re</p> <p>Page 12</p>	<ul style="list-style-type: none"> ■ The Solvency II Directive will be based on the Basel-type three pillar approach used in banking ■ Assets and liabilities will most probably be valued on a market-consistent basis for solvency calculation purposes ■ Introduction of risk-related capital charges for both underwriting and investment risks ■ Details remain to be determined, <i>but</i> <ul style="list-style-type: none"> - Solvency II will reinforce risk-adequate pricing and favour companies with sophisticated risk based management systems - Solvency II has similar objectives as SST

	<p style="text-align: right;">Swiss Re </p> <p style="text-align: center;">Summary</p>
<p>Operating under multiple constraints...</p> <p>The Geneva Association Seminar London, 7-8 Dec 2006 Guido Fürer, Swiss Re</p> <p>Page 13</p>	 <p style="text-align: center;">ALM; Optimal Asset Allocation</p> <p>“Our view of the world”</p> <p>Rating Agencies</p> <p>Regulators</p> <p>Shareholders/ Investors</p>