Investors’ Day
Risk Management/New Accounting Standards

B. Pfister/H.J. Wolter
Zurich, 2 December 2004
Agenda

1. Introduction
2. Risk management
3. Value management
4. Regulatory changes
5. Accounting changes
6. Consequences for the organisation
7. Further developments
Achievements in 2004

- Better understanding of liabilities leading to a more thorough ALM process
- Group-level risk management and ALM organisational structure put in place
- Further de-risking measures taken (e.g. reduction of the duration gap)
- Major contribution to development of Swiss Solvency Test
Factors influencing Swiss Life

Value management

Risk management

Regulatory changes

Accounting changes
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A new liability notation is used

- Guaranteed cash flows
- Non-guaranteed cash flows
- Embedded options
- Guaranteed cash flows
- Supplementary insurance payments
- Insurance obligations
Insurance obligations are our primary product and affected by external factors

External factors
- Capital Markets
- Economy
- Insurance Market
  - Competitors’ behaviour
  - Clients’ behaviour
- Legal & regulatory
- Tax

Insurance obligations
- Guarantees
- Bonuses
- Embedded options
Crediting policy looks at competitors’ behaviour, risk capacity and asset allocation.
High investment return volatility reduces value compared to stable (yet lower) returns

Illustrative, in CHF million

Investment return p.a.

Sensitivity analysis

<table>
<thead>
<tr>
<th>New business p.a.</th>
<th>Average lapse rate</th>
<th>NPV</th>
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<tbody>
<tr>
<td>Stable returns</td>
<td>500</td>
<td>2%</td>
</tr>
<tr>
<td>Volatile returns</td>
<td>400</td>
<td>4%</td>
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</tbody>
</table>

Volatile investment returns therefore cause lower average new business, higher lapse rate and lower valuation

Note: All values based on business cycle macro-economic environment
Embedded options are rights for the policyholder to change the existing policy

Examples of significant options:
- Right to surrender the contract at a predefined minimum value
- Right to cancel future premiums
- Right to get capital instead of annuities

Room to manoeuvre:
- Delayed bonus payments (e.g. terminal bonus)
- Penalty
- Values dependent on market interest rates
Embedded options - valuation techniques

Basis for embedded options’ valuation

<table>
<thead>
<tr>
<th>Financially rational policyholder behaviour</th>
<th>Observed policyholder behaviour</th>
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<tbody>
<tr>
<td><strong>Application</strong></td>
<td><strong>Goals</strong></td>
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<tr>
<td>Mainly used for product design</td>
<td>■ Understanding of</td>
</tr>
<tr>
<td></td>
<td>■ Mechanism of the various</td>
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<td>■ Options’ inherent risk</td>
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<td>■ Getting an upper bound for</td>
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<tr>
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<td>■ Improving the product</td>
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<td>■ Providing verification for</td>
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<td>■ Calculating fair value</td>
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<tr>
<td></td>
<td>■ Capturing entire behaviour</td>
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<td></td>
<td>■ Calculating a market-consistent value</td>
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<tr>
<td></td>
<td>■ Using values for</td>
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<tr>
<td></td>
<td>■ SST</td>
</tr>
<tr>
<td></td>
<td>■ Embedded Values under EEV^1</td>
</tr>
<tr>
<td></td>
<td>Principles</td>
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</tbody>
</table>

1) European Embedded Value
Example: Surrender option on single premium endowment contract

Rational financial behaviour of policyholder assumed!

Two different guaranteed surrender value rules:

1) Contracts before 1.8.1999: mathematical reserves plus accrued bonus less a penalty (about 3% of mathematical reserves)

2) Contracts after 1.8.1999: 80% of mathematical reserves plus accrued bonus

Option value in percentage of policyholder's reserve:

1) 5.6%
2) 0.8%
Liability cash flows are complex in reality and vary with market returns

Interest rates

Minimum guaranteed return

100% Degree of CF matching low
long Duration short

Guarantees Bonus Options
Guarantees Bonus Options
Guarantees Options
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Embedded values, a widely used standard with some teething troubles

### Traditional definition

- Valuation of business in force
- Embedded Value = ANAV (Adjusted Net Asset Value)
  + PVFP (Present Value of Future Profits)
  - Lock-in Costs (Opportunity cost of holding solvency capital)

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>Relatively easy to explain and well understood</td>
<td>Various mutually inconsistent methodologies for economic assumptions</td>
</tr>
<tr>
<td>Widely applied</td>
<td>No explicit allowance for costs of guarantees and embedded options</td>
</tr>
<tr>
<td>Used in market transactions</td>
<td>Lack of transparency</td>
</tr>
<tr>
<td>Basic idea in line with valuation systems for other industries</td>
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</table>
The CFO Forum agreed to strengthen the embedded value rules: European Embedded Value Principles

Most significant improvements to traditional principles:

- **Direct influence of options’ and guarantees’ values**
  - Allow for time value of options and guarantees explicitly
  - Use stochastic techniques for the valuation of options and guarantees

- **Restrictions to degrees of freedom**
  - Economic assumptions for operations in mature markets must be based on observable, reliable market data
  - Participating business assumptions to be consistent with projection assumptions, established company and market practice (includes modelling of client and management behaviour)

- **Disclosure rules**
  - New disclosure rules will lead to higher transparency and comparability

Note: The European Embedded Value Principles are accessible at www.cfoforum.nl
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Internal and external risk processes go in the same direction

Analytical model
(expected shortfall as risk measure)

- Market risks
- Insurance risks

Scenario aggregation

e.g.
- Pandemic
- Stock market crash
- Financial distress
- Reinsurance defaults

Weighted average of scenarios with results from analytical model

+ Credit risk charge

+ Risk margin

= Target capital
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Swiss Life prepared to implement accounting changes

- IFRS 4 insurance contracts
- IAS 32/39 financial instruments (revised)
- Other revised/new IAS/IFRS standards

⇒ Restatement of 2004 figures in process
⇒ Restatement impact will be communicated prior to release of 2005 half-year figures
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A holistic risk management approach allows better risk steering

as per 01.10.2004
All risk drivers are now covered in Group Risk Management department

Integrated risk management process

Marked-to-market balance sheet

- Assets (fair value)
- Liabilities (fair value)
- Economic net worth

Risk budget

- Economic net worth
- Available risk capital
- Used risk capital
- Free risk capital

Risk drivers

- Market
- Insur-ance
- Credit
- Other¹

¹) Operational, business and strategic risk

Note: Simplified illustration since diversification between assets and liabilities excluded
The risk management processes are embedded in the Group-wide planning process

**Risk budgeting**
- Available risk capital determination
- Current risk capital consumption
- Risk Budgeting by BU

**ALM process**
- Allocation of risk capital
- Determination of risk and capital limits
- Determination of strategic asset allocation

**Closing**
- Annual Closing
- Embedded Value
- Media/Analyst communication

**MTP¹/annual budget**
- Long-term objectives and strategic business priorities per core life market unit
- Functional objectives and strategies
- Definition, monitoring and review of financial and functional KPI targets

¹) Medium-term planning
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Further developments

- Active exchange of knowledge throughout the group to:
  - Strengthen knowledge on risk
  - Ensure common understanding

- Integrated risk function in order to:
  - Increase risk awareness in other departments
  - Develop risk management capabilities in other functional units

- Swiss Life proactively supports and welcomes the new developments of SST/Solvency II
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