Managing Value using Market Consistent Methodologies

MCEV – value management accelerator or hand brake?

Stefan Heyers
Ernst & Young GmbH
Munich, 7 September 2009
Agenda

1. Requirements for risk appropriate value measurement
2. Appropriateness of Market-Consistent-Valuation-Methods
3. Suitability of MCEV
4. Value based management using MCEV
Implementing VBM
Information for corporate management

Priorities

Management board

Constraints

VBM-data

Risk data

CRO

Risk management
risk report, risk bearing capacity and limit system

valuation data

Actuary in charge

Actuaries
modelling, MCEV, profit margin, et al.

financial data

CFO

Controlling and accounting
balance sheet, profit and loss, et al.

Business units

CFO: Chief Risk Officer, CFO: Chief Financial Officer, VBM: Value based management
### Implementing VBM
Processes, Methods and Organization

<table>
<thead>
<tr>
<th>Processes</th>
<th>Methods</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Calculation of results</strong></td>
<td>- Defined accounting for service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Financial reporting on business units</td>
<td></td>
</tr>
<tr>
<td>• <strong>Quantification of risks</strong></td>
<td>- Risk models</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Concept for risk bearing capacity &amp; limit system</td>
<td></td>
</tr>
<tr>
<td>• <strong>Reporting / Decision / Controlling</strong></td>
<td>- Hierarchical, consistent system of risk guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Inspection of and compliance with the specified risk guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Determination of binding minimal requirements for operating units</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Capturing transactions within the group</td>
<td></td>
</tr>
<tr>
<td>• <strong>Sufficient calculating capacity</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Implementing VBM
Processes, Methods and Organization

<table>
<thead>
<tr>
<th>Processes</th>
<th>Methods</th>
<th>Organization</th>
</tr>
</thead>
</table>
| • **Calculation of results**  
  – Determination of capital cost requirements (on the balance sheet vs. economical)  
| • **Quantification of risks**  
  – Risk models with appropriate methods  
  – Definition of when events are classified to be exceptional, show the effects of those events on VBM key figures and, if applicable, make qualitative comments | |  
| • **Reporting / Decision / Controlling**  
  – Regular calculation and reporting of key figures |  
| • **Risk bearing capacity and limit system** have to be clearly documented and comprehensible | |  


Implementing VBM
Processes, Methods and Organization

<table>
<thead>
<tr>
<th>Processes</th>
<th>Methods</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Responsibilities</strong>&lt;br&gt;  – Results (revenues and expenses) and risks have to be clearly assigned to the business units that are to be controlled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Separation of functions</strong>&lt;br&gt;  – Existence of an independent risk controlling&lt;br&gt;  – Separation of risk assumption and risk controlling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Interdependencies between business units</strong>&lt;br&gt;  – The different strategic interests of the business units, including marketing and distribution, have to be incorporated into the new corporate management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Documentation of the operational and organizational structure</strong>&lt;br&gt;  – The control system has to be documented (with respect to risk model, process cycle, level of automation, cycle for updating and adoption of the system to new requirements)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Agenda

1. Requirements for risk appropriate value measurement
2. Appropriateness of Market-Consistent-Valuation-Methods
3. Suitability of MCEV
4. Value based management using MCEV
GAAP vs MC B/S

GAAP Balance Sheet

- Asset
- Liability
- Free Surplus
- Solvency Capital
- GAAP reserves

Market Consistent Balance Sheet (MC B/S)

- Asset
- Liability
- Free Surplus
- Economic Capital
- Risk margin in reserves
- Best estimate reserves
- Technical Provisions = Market consistent valuation of hedgeable risks

GAAP: Generally accepted accounting principles; MC B/S: Market Consistent Balance Sheet
### Differences between GAAP and MC B/S

**GAAP Balance Sheet**
- Cost of **guarantees** & options not explicitly valued
- Liabilities contain implicit “**margins**”, that may in fact be shortfalls
- Embedded value calculations required to determine the **true value** of the business
- Solvency capital requirement unresponsive to **risk profile** of the business
- **Allocation of capital** to different businesses is not efficient – actual profitability of the business and risk-based capital requirements not visible

**Market Consistent B/S**
- **Value of liabilities** should equate to the cost of laying off the risks to a third party
- If liabilities are valued on a market consistent basis, then **MC VIF** should be zero
- Economic capital requirements that reflect the **true risks** of the business are determined from the change in economic balance sheet under different scenarios
- Capital can be **efficiently allocated** since profit measures can be used that reflect the cost of bearing the risks of the business

---

MC VIF: Market consistent value of in force; MC B/S: Market Consistent Balance Sheet
Calculating MC B/S: Indirect
Method that has been typically adopted to date

Solvency II Balance Sheet

- **Asset**
  - Best estimate reserves
  - Market Value Margin
  - Free Surplus
  - SCR
  - MCR

- **Liability**
  - Market consistent value of liabilities
  - Net Asset Value
  - SCR
  - MCR
  - Future profits

**Additional Notes:**
- SCR: Solvency Capital Requirement, MCR: Minimum Capital Requirement,
- O&G: Options & Guarantees, CoC: Cost of Capital, CNHR: Cost of residual Non-Hedgeable Risks
Calculating MC B/S: Direct
Approach that reflects leading market practice

Solvency II Balance Sheet

- Asset
- Liability
  - Free Surplus
  - MCR
  - Market Value Margin
  - Best estimate reserves

Components of cashflow that cannot be valued using equivalent assets – valued using a stochastic balance sheet (market to model)

Components of cashflow that can be valued by equivalent liquid, traded assets (marked to market)
Are market consistent methods appropriate?

- The embedded value methodology is currently the only valuation methodology that captures the **long term nature** of the business.
- **Objectivity** of actuarial parameters can only be achieved through reference to some benchmark. There is currently no better benchmark than information from the capital markets.
- These methods probably also form the basis for accounting under **IFRS** and risk management under **Solvency II**.
- Market Consistent-methods seem to be the only solution to reaching **comparability** between value disclosures of different companies.
- MC-Results may be **volatile**. Management has the responsibility to manage (and reduce) these volatilities. This puts the focus firmly on value management instead of parameter selection and is an objective base for setting incentives.
Agenda

1. Requirements for risk appropriate value measurement
2. Appropriateness of Market-Consistent-Valuation-Methods
3. Suitability of MCEV
4. Value based management using MCEV
Is MCEV a suitable value measure?

• MCEV measures long term value based on **objective** market consistent economic parameters
• December 2008 valuations were problematic, since the **market was unstable**, leading to significant liquidity premiums and increased volatilities
• The MCEV principles are still **developing** and need to be tested
• The calculation of **New Business Value** still needs to be clearly defined
• The **Analysis of Change** needs to be made more transparent. This includes a proper roll forward considering the unwinding of discount rate, release of the cost of options & guarantees and CNHR
• This Analysis of Change should be geared towards differentiating between changes created by **operational and by economic influences**
Consequences of using MCEV

- MCEVs are increasingly **aligned** to how insurance businesses are managed.
- Calibration of economic parameters to market data more **objective**, but lack of suitable long-term options for **calibration** may create non-hedgeable financial risk.
- Changes to deterministic VIF and cost of financial options and guarantees to the extent that swap curve differs from previous assumptions; **results** potentially more **volatile**.
- For spread-supported business (such as immediate annuities), value of business severely impacted – companies affected may publish a value for the **liquidity premium** on the basis that assets are held to maturity.
Agenda

1. Requirements for risk appropriate value measurement
2. Appropriateness of Market-Consistent-Valuation-Methods
3. Suitability of MCEV
4. Value based management using MCEV
VBM and additional requirements

The internal controlling can not be done only on the basis of risk oriented key figures but is subject to additional requirements such as:

• **GAAP-Accounting:**
  • Solvency
  • Fulfilling the expectations for dividends
  • Other internal local GAAP-requirements (e.g. profit participation)

• **IFRS-Accounting:**
  • Arriving at the planned absolute IFRS-results

• **Regulatory requirements:**
  • Compliance with the legal and regulatory requirements regarding equity capital and risk bearing capacity and meeting the Minimum Capital Ratio (MCR) and the solvency requirements (SCR) according to Solvency II

• **Rating standards:**
  • Achieving the target rating
Role of market consistency in financial management

- Risk and Capital Management
  - Solvency II
  - Rating Agencies

- Value Management
  - MCEV
  - IFRS Phase II

- Market Consistent Balance Sheet

- Performance Measurement
  - Return on MCEV
  - RARORAC
Value management:
Ways management can add value in a market consistent world

- **New business**
  - Write new business with a positive VNB
- **Beat best estimate assumptions**
  - Manage more efficiently non-economic factors that can be influenced by management
  - Undertake tactical and strategic asset allocation to improve returns (net of cost of capital to support the additional financial risks taken on)
- **Reduce capital requirements**
  - Redesign products to optimise capital efficiency
  - Write business that improves diversification benefits
  - Seek opportunities to transfer risks provided that the benefits outweigh the costs
Performance management: In a market consistent world

- In economic terms, the preferred performance measure is:
  - Risk Adjusted Return On Risk Adjusted Capital (RARORAC)

- For companies reporting on an MCEV basis, Return on MCEV is the typical performance measure:
  - Return on MCEV = MCEV Earnings / MCEV

- The value created should be split between economic influences and management decisions.

- Since MCEV Earnings include both the economic and operating effects, these should be allowed for when considering the MC value added by management
  - MC Valued Added = MCEV Earnings – economic effects

- Primary performance target is positive MC Value Added (Operating MC Value Added)
Managing value using MCEV

Summary

• In general market consistency reduces subjectivity of parameters and results

• MCEV appropriately allows for the long term nature of life insurance business and an objective reference to capital market information. However, the principles still need to mature.

• Subjectivity still remains in setting assumptions for policyholder behaviour and management action. Model design is driven by accuracy and speed of calculation. Reconciliation with IFRS and Solvency II could be challenging.

• MCEV is a useful base for risk adjusted value management. Only a part of the value created can be attributed to management performance.
Thank you for your attention!
Any questions?

Stefan Heyers
Ernst & Young GmbH
Munich, 7 September 2009