| | **IASB/FASB Meeting**<br>**Week commencing 21 March 2011** | IASB Agenda reference | **12B** |
|---|---|---|---|
| | | FASB Agenda reference | **61A** |
| Project | **Insurance contracts** | | |
| Topic | **Education session on explicit risk adjustment** | | |

# IASB / FASB Meeting Risk Adjustment

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# Introduction

- In 2002, Swiss Re introduced an internal economic accounting framework called Economic Value Management (EVM)
- EVM is now used for:
  - Pricing of reinsurance / insurance business
  - Asset Liability Management (ALM)
  - Internal / external performance reporting for all business
  - Regulatory reporting under the Swiss Solvency Test
- The EVM framework uses the cost of capital approach to calculate required returns
- For underwriting activities, the cost of capital includes our estimate of the frictional cost of the capital held for taking re/insurance risk

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# EVM results are meant to respond to three main questions:

Are our underwriting activities creating economic value on a stand-alone basis?

Are our investment activities creating economic value after risk adjustments?

Can we assess different underwriting and investment opportunities on a like for like basis?

**EVM profit is the common measure of economic value creation that guides steering decisions**

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# The EVM framework…

Splits performance of fund raising activities (underwriting) and fund investment activities (asset management)

Recognises all profits on new business at inception, changes in estimates as they occur, and excludes future new business

Values assets and liabilities on a market consistent basis

Reflects best estimates

Measures performance after capital costs (i.e. cost to shareholders of taking risk – the risk adjustment)

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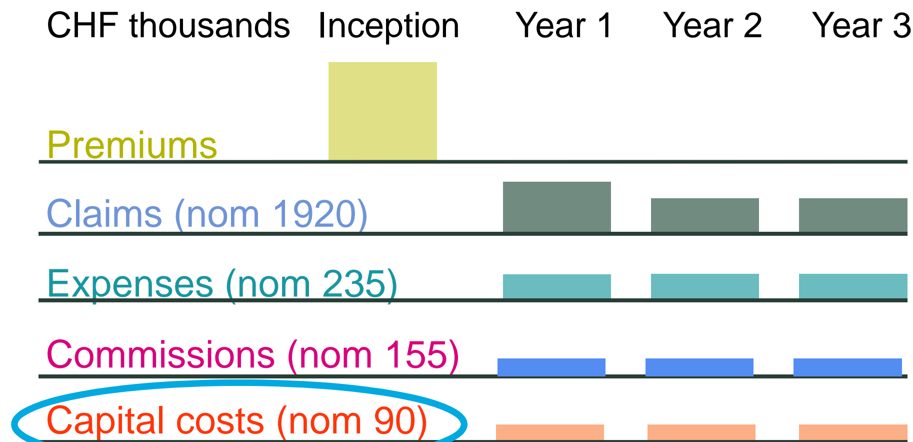
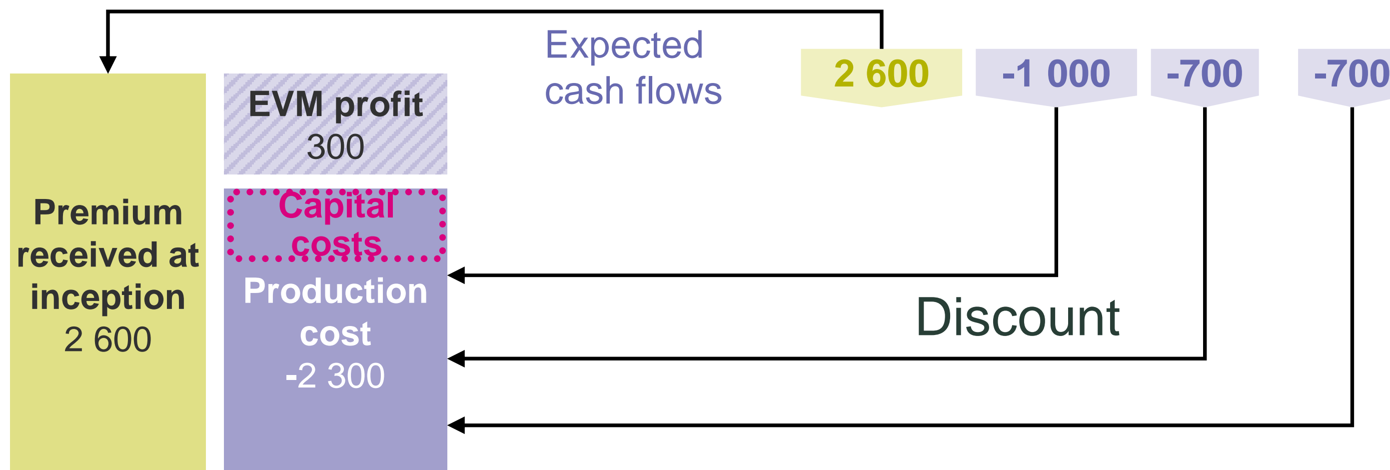
# Measurement of underwriting activities

In EVM, profit (after capital costs) is recognised upfront. Over the lifetime of the contract, frictional capital costs are released and recognised as income, as liabilities run off.

**Example:** Fire risk XL contract at inception, illustrative only



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# Measurement of underwriting activities

## Profit recognition simplified to assume a linear unwind of capital costs and actual claims are equal to expected

Evolution of the EVM balance sheet over the lifetime of the contract

**T 0**

- Economic value of assets 2 600
- Capital costs
- Economic value of liabilities -2 300
- Economic Net Worth 300

EVM shareholders' value creation at inception: 300

**Year 1**

- Economic value of assets 1 600
- Capital costs
- Economic value of liabilities -1 270
- Economic Net Worth 330

Cash outflows: -1000

Release of capital costs: 30

**Year 2**

- Economic value of assets 900
- Capital costs
- Economic value of liabilities -540
- Economic Net Worth 360

Cash outflows: -700

Release of capital costs: 30

**Year 3**

- Economic value of assets 0
- Economic value of liabilities 0
- Economic Net Worth 390

All claims paid out

Capital costs completely released

Timeline: T 0 — Year 1 — Year 2 — Year 3

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# EVM income statement
## Business segments

| CHF million | Property & Casualty | Life & Health | Asset Mgt | Legacy | Group Items | Total |
|---|---|---|---|---|---|---|
| **2009** | | | | | | |
| New business profit/loss | 1 002 | 311 | 4 162 | 213 | 432 | **6 120** |
| Previous years' business profit/loss | 370 | 401 | n/a | -309 | 498 | **960** |
| **Total profit/loss after capital costs** | **1 372** | **712** | **4 162** | **-96** | **930** | **7 080** |
| Release of capital costs | 552 | 261 | 1 677 | 304 | 20 | **2 814** |
| **Income before capital costs** | **1 924** | **973** | **5 839** | **208** | **950** | **9 894** |

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# Total capital costs in EVM

**EVM group capital costs consist of:**

- Risk free return on capital representing shareholders base cost of capital
- Market risk premium (MRP) representing the shareholders' expected excess returns on market risk exposure, applicable to all business activities that generate systematic market risk
- Frictional capital costs (FCC) representing shareholders required compensation for agency costs, cost of potential financial distress and regulatory/illiquidity costs

required return on underwriting risk only

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# Frictional capital costs: the cost of taking risk – the theoretical view

**Risk costs:**
- Agency costs (lack of transparency, management incentives)
- Potential financial distress (cost of raising fresh capital, loss of franchise value)

**Regulatory Capital Costs:**
- Cost of regulatory restrictions on capital

**Double taxation costs:**
- Compensation for corporate tax incurred on the base cost of capital (not incurred by investment fund)

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# Allocating frictional capital costs - summary

- Frictional capital costs are calculated based on a 4% charge on projected EVM Capital
- EVM Capital takes into account internal risk, regulatory and rating capital requirements defined as follows:

| | |
|---|---|
| Risk capital | Assets required under an internal risk model less EVM liability - internal risk capital |
| Regulatory capital | Statutory reserves + Statutory solvency capital less EVM liability - regulatory capital and margins |
| Rating capital | Rating Agency adjusted liability + Rating Agency target capital less EVM liability - rating capital |

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# Allocating frictional capital costs – details (1)

- In practice, the allocation is done as follows

| | |
|---|---|
| Risk capital | For L&H, the allocation is based on reinsurance risk factors calculated for each type of business. Depending on the type of risk, the factor is applied in different ways, for example to the sum at risk of the treaty and/or the present value of expected claims<br><br>For P&C, a loss uncertainty model produces an estimate for expected loss cash flows in the future along with an estimate for the potential variability of the contract. Based on the expected loss and the potential variability, an estimate of the contribution to the group risk capital is calculated based on intensities. This is then applied to the business written |

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# Allocating frictional capital costs – details (2)

- In practice, the allocation is done as follows

| | |
|---|---|
| Rating capital | A rating agency model defines the level of capital required, mainly based on fixed percentages of premiums, reserves, etc. For reporting and costing purposes this number is calculated to reflect the group target capital (XX% on top of the agency capital). |
| Regulatory capital | The EVM Regulatory capital, based on local requirements, is calculated bottom up, reflecting the type of business and legal entity regulatory requirements. |

# Example P&C portfolio – the cashflows assuming 1 Jan inception

Determined by:

One legal entity/branch
One geography
One line and type of business
One base currency

Expected nominal cash flows (in USD millions):

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| Premiums | 14.300 | 5.300 | 1.100 | 0.300 | 0.200 | 0.100 | | | | |
| Commissions | -4.100 | -1.500 | -0.300 | -0.100 | -0.100 | -0.030 | | | | |
| Claims | -1.100 | -6.600 | -3.000 | -1.300 | -0.800 | -0.500 | -0.300 | -0.200 | -0.175 | -0.140 |
| Run-Off Expenses | -0.010 | -0.120 | -0.050 | -0.020 | -0.010 | -0.007 | -0.005 | -0.004 | -0.003 | -0.002 |
| Acquisition Expenses | -0.500 | | | | | | | | | |

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# Example P&C portfolio – risk adjustment

The frictional capital costs in EVM are a charge of 4% on EVM Capital.

EVM Capital and frictional capital costs for the sample portfolio (in USD millions):

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| EVM Capital | 5.095 | 0.902 | 0.242 | 0.108 | 0.065 | 0.033 | 0.016 | 0.012 | 0.004 | 0.001 |
| Frict. Capital Costs | -0.204 | -0.036 | -0.010 | -0.004 | -0.003 | -0.001 | -0.001 | -0.000 | -0.000 | -0.000 |

Total frictional capital costs USDM 0.257

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# Example P&C portfolio – income Statement and Balance Sheet year 1

## Income Statement

| | |
|---|---|
| PV of Premiums | 21.035 |
| PV of Commission | -6.049 |
| PV of Claims | -13.435 |
| PV of Internal Expenses | -0.720 |
| PV of Taxes | -0.236 |
| PV of EVM Capital Charge | -0.257 |
| PV of Asset Management Fees | -0.021 |
| EVM Profit on New Business | 0.317 |
| | |
| Release of capital charge provision | 0.204 |
| EVM Net Income | 0.521 |

PV = Present Value

## Balance Sheet

| | |
|---|---|
| **Assets** | |
| Value of the Replicating Portfolio | 8.171 |
| PV of future Premiums | 7.026 |
| Total Assets | 15.198 |
| **Liabilities** | |
| PV of future Commissions | -2.035 |
| PV of future Claims | -12.855 |
| PV of future Internal Expenses | -0.219 |
| PV of future Taxes | -0.019 |
| PV of future EVM capital charge | -0.055 |
| PV of future Asset Management Fees | -0.015 |
| Total Liabilities | -15.198 |

Total capital charge

Year 1 release

Provision future years

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# EVM capital allocation by segment

| CHF billion | Property & Casualty | Life & Health | Asset Mgt | Legacy | Group Items | Total |
|---|---|---|---|---|---|---|
| **Allocation at year end FX** | | | | | | |
| 2009 | 11.5 | 9.6 | 4.5 | 0.9 | 2.1 | **28.6** |
| 2008 | 13.7 | 6.7 | 5.3 | 0.4 | -0.5 | **25.6** |

- EVM capital costs are allocated taking internal risk, regulatory and rating agency capital requirements into consideration

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# Summary

- The risk adjustment described here requires:
  - an estimate of the capital required to support the risk business over time
  - an estimate of the cost of that capital
- The capital estimates are more or less complicated depending on the nature of the business and the method used for estimating capital
- The cost estimate requires a judgement, which reflects the company's assessment of their cost of risk
- The result is valuable information about the economic performance of insurance or reinsurance business

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# Thank you