

# **Konzultační materiál CEIOPS č. 54**

## **Loss-absorbing capacity of technical provisions and deferred taxes**

**Seminář z aktuárských věd**

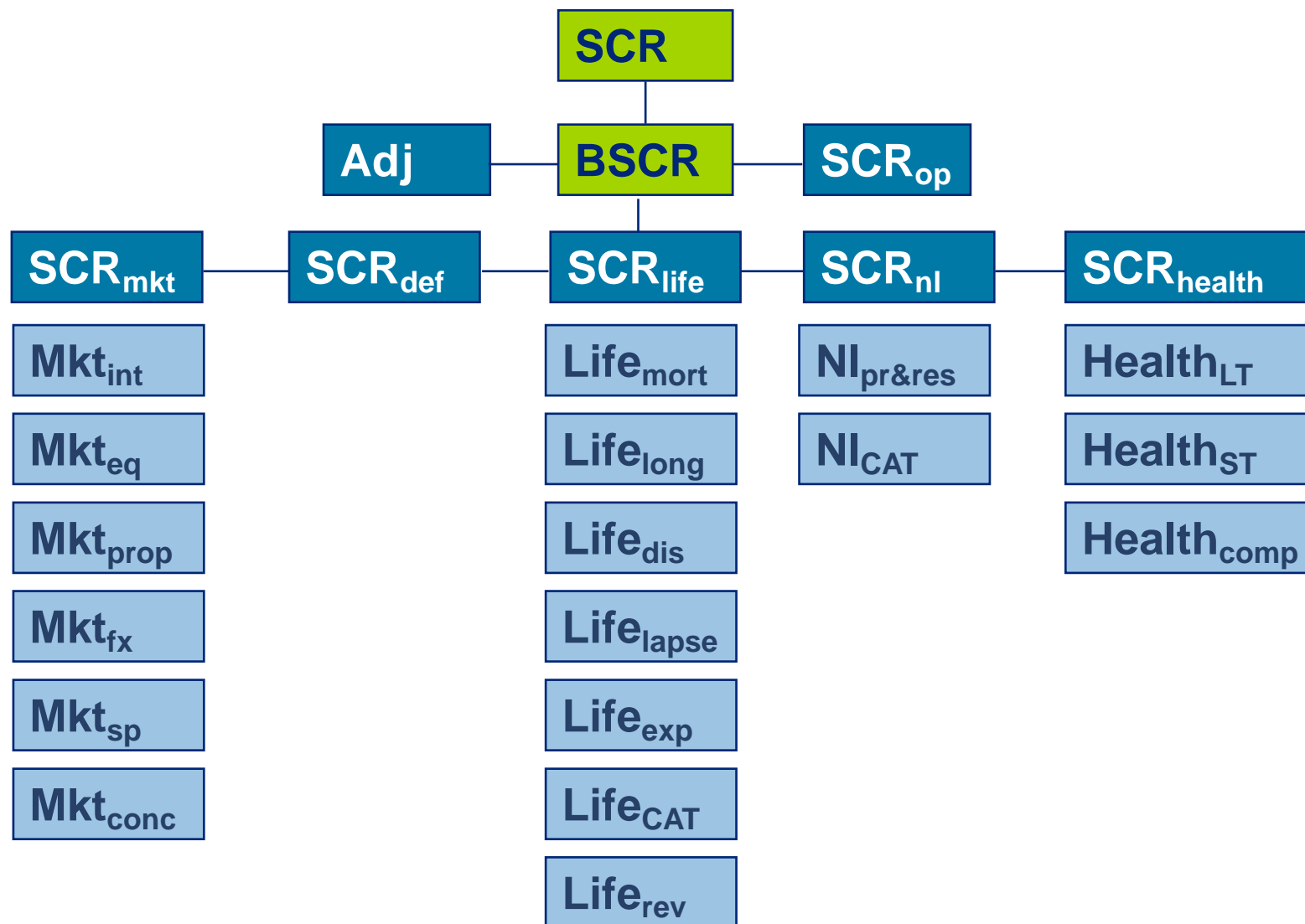
**Jiří Fialka**

**Jan Stejskal**

**18. prosince 2009**



# SCR – Modular approach



Standard formula SCR

Loss-absorbing capacity  
of technical provisions  
and deferred taxes

(CP 54)

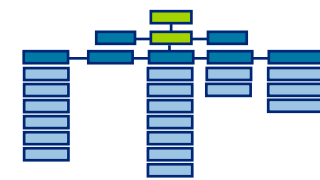
# Deferred tax

**Deferred tax** is an accounting concept, meaning a future tax liability or asset, resulting from temporary differences between book (accounting) value of assets and liabilities and their tax value, or timing differences between the recognition of gains and losses in financial statements and their recognition in a tax computation.

Zdroj: Wikipedia

Příklady:           Nedaňová IBNR – vede k aktivu odložené daně  
                      Minulé ztráty – vede k aktivu odložené daně  
                      Zrychlená daňová amortizace – závazek odložené daně

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



## Consultation paper 54

1. Paper is largely consistent with the approaches and definitions used in QIS4
2. CEIOPS clarifies some definitions and gives some **additional advice** on some features of the calculations
3. Paper tries to give a clearer definition of future discretionary benefits
  - Guaranteed benefits
  - Conditional discretionary benefits
  - Pure discretionary benefits

## Additional information/comments

- A. Gross/Net calculation
- B. Management actions
  - Usage in the calculation of TP as well as the SCR must be objective, realistic and verifiable
  - Under stress conditions which are considered to be an instantaneous stress, no management actions may be assumed to occur during the stress
- C. Double counting of the risk mitigation effects under the “modular” approach
  - Adjustment of the loss-absorbing capacity of future discretionary benefits is limited by the value of the future discretionary benefits
  - Double counting is avoided if the “single equivalent scenario” is used

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



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## General comments by the CEA

1. Gross calculation should be performed via a simplified approach
2. An economic approach requires the recognition of all economic value including deferred tax assets
3. No mention is made of how to allow for new business expected to be written in the following 12 months
4. This paper only makes reference to profit sharing mechanisms – The CEA requests that CEIOPS clarifies that ALL other management actions should be taken into account in all the calculations referred to in this paper
5. Management actions assumed to occur during the stress should be recognised

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



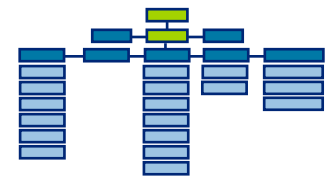
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## General comments by the CFO Forum

1. Ignoring the economic benefits of a going concern basis is contradictory to the objectives of Solvency II.
2. Pragmatic approach should be encouraged throughout the consultation paper.
3. CFO Forum disagrees with the view that plausible management actions should be restricted to policyholder benefit rates.

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



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## General comments by the CRO Forum

1. Proposed calculation approach is difficult to implement practically.
2. Economic value of deferred tax assets in stressed circumstances should be recognised.
3. Confirmation that the scope of advice on management actions in this paper is limited to future discretionary benefits is required.



# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



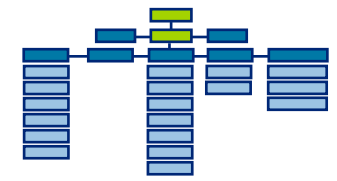
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## General comments by the Groupe Consultatif

1. More work is required to build consensus on an appropriate approach:
  - Modular 'gross SCR' approach is not practical or meaningful; and
  - GC has recently become aware of the alternative approach.
2. Limitations to loss-carry-forward and profit recognition should be taken into consideration.
3. General thrust of this CP does not fit well with the management of at least some types of with profits business.
4. CP may be seeking to limit the range of management actions available to the undertaking in calculating the SCR.

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



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## CEIOPS's Advice

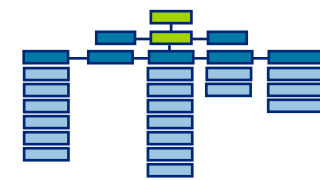
1. Deferred tax asset allowed to some extent.
2. CEIOPS's Advice contains new final definition of gross calculation.
3. Both “modular” and “single equivalent scenario” to be tested in QIS5

Standard formula SCR

# Loss-absorbing capacity of technical provisions and deferred taxes

Impact of using net or gross capital requirements to  
construct the single equivalent scenario

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



Impact of using net or gross capital requirements to construct the single equivalent scenario

## Input parameters

Suppose that a firm is exposed to three risks A, B and C.

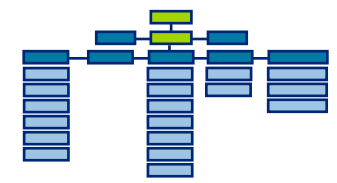
Risk	Capital charge	Stress tests	Correlation matrix	A	B	C
				A	50	25%
B	100	-40%	B	0.25	1.00	0.75
C	200	40%	C	0.50	0.75	1.00

*Matrix  $M_{Gross}$*  : The undiversified gross capital charges

Correlation *matrix  $M_{Corr}$*

Remark: All three examples are copied from Consultation paper 54.

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



Example 1: Using gross capital requirements to calculate the single equivalent scenario

Step A

The first step in the construction of the single equivalent scenario is to calculate the product of the matrices  $M_{Corr}$  and  $M_{Gross}$ .

A 175 (50\*1+100\*0.25+200\*0.5)  
 B 263 (50\*0.25+100\*1+200\*0.75)  
 C 300 (50\*0.5+100\*0.75+200\*1)  
 matrix  $M_1$

Step B

Calculation of the aggregate, diversified capital requirement,  $D$

$$D = (M_{Gross}^T * M_1)^{1/2}$$

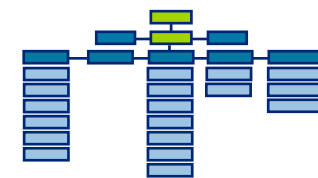
D = 308  
 (50\*175+100\*263+200\*300)<sup>1/2</sup>

Step C

For each risk  $i$ , calculation of the allocated diversified capital:  $M_{Gross,i} * M_{1,i} / D$

A 28 (50\*175/308)  
 B 85 (100\*263/308)  
 C 195 (200\*300/308)  
 matrix  $M_2$

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



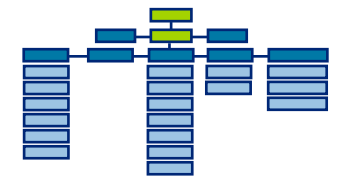
Example 1: Using gross capital requirements to calculate the single equivalent scenario

## Step D

The allocated diversified capital may then be used to derive the required **stress test for the single equivalent scenario**

Risk	Undiversified Capital charge	Diversified Capital charge	Original stress tests	Stress test in single equivalent scenario
A	50	28	25%	14% ( $28/50 * 25%$ )
B	100	85	-40%	-34% ( $85/100 * (-40%)$ )
C	200	185	40%	39% ( $195/200 * 40%$ )

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



## Example 1: Using net capital requirements to calculate the single equivalent scenario

Suppose that the impact of loss absorbency of technical provisions is such that the gross capital requirements for each risk are reduced by 90% i.e. net capital charges are A 5, B 10, C 20 (*Matrix  $M_{Net}$* )

### Step A

The first step in the construction of the single equivalent scenario is to calculate the product of the matrices  $M_{Corr}$  and  $M_{Net}$

A 17.5 ( $5*1+10*0.25+20*0.5$ )  
 B 26.3 ( $5*0.25+10*1+20*0.75$ )  
 C 30.0 ( $5*0.5+10*0.75+20*1$ )  
*matrix  $M_1$*

### Step B

Calculation of the aggregate, diversified capital requirement,  $D$

$$D = (M_{Net}^T * M_1)^{1/2}$$

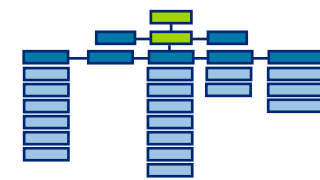
$D = 30.8$   
 $(5*17.5+10*26.3+20*30.0)^{1/2}$

### Step C

For each risk  $i$ , calculation of the allocated diversified capital:  $M_{Net,i} * M_{1,i} / D$

A 2.8 ( $5*17.5/308$ )  
 B 8.5 ( $10*26.3/308$ )  
 C 19.5 ( $20*30.0/308$ )  
*matrix  $M_2$*

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



Example 1: Using gross capital requirements to calculate the single equivalent scenario

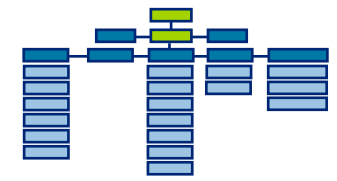
## Step D

The allocated diversified capital may then be used to derive the required **stress test for the single equivalent scenario**

Risk	Undiversified Capital charge	Diversified Capital charge	Original stress tests	Stress test in single equivalent scenario
A	5.0	2.8	25%	14% ( $2.8/5.0 * 25%$ )
B	10.0	8.5	-40%	-34% ( $8.5/10 * (-40%)$ )
C	20.0	18.5	40%	39% ( $19.5/20 * 40%$ )



# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



## Example 1: Using net capital requirements to calculate the single equivalent scenario

Suppose now that the impact of loss absorbency of technical provisions varies across risks:

A 10%; B 90%, C 50% i.e. net capital charges are A 45, B 10, C 100 (Matrix  $M_{Net}$ )

### Step A

The first step in the construction of the single equivalent scenario is to calculate the product of the matrices  $M_{Corr}$  and  $M_{Net}$

A 97.5 ( $45 \cdot 1 + 10 \cdot 0.25 + 100 \cdot 0.5$ )  
 B 96.3 ( $45 \cdot 0.25 + 10 \cdot 1 + 100 \cdot 0.75$ )  
 C 130.0 ( $45 \cdot 0.5 + 10 \cdot 0.75 + 100 \cdot 1$ )  
 matrix  $M_1$

### Step B

Calculation of the aggregate, diversified capital requirement,  $D$

$$D = (M_{Net}^T * M_1)^{1/2}$$

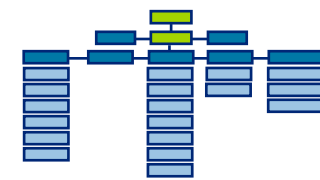
$D = 135.5$   
 $(45 \cdot 97.5 + 10 \cdot 96.3 + 100 \cdot 130)^{1/2}$

### Step C

For each risk  $i$ , calculation of the allocated diversified capital:  $M_{Net,i} * M_{1,i} / D$

A 32.4 ( $45 \cdot 97.5 / 135.5$ )  
 B 7.1 ( $10 \cdot 96.3 / 135.5$ )  
 C 96  
 matrix  $M_2$

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



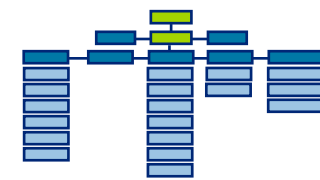
Example 1: Using gross capital requirements to calculate the single equivalent scenario

## Step D

The allocated diversified capital may then be used to derive the required **stress test for the single equivalent scenario**

Risk	Undiversified Capital charge	Diversified Capital charge	Original stress tests	Stress test in single equivalent scenario
A	45	32.4	25%	18% ( $32.4/45 * 25%$ )
B	10	7.1	-40%	-28% ( $7.1/10 * (-40%)$ )
C	100	95.9	40%	38% ( $96/100 * 40%$ )

# SCR – Loss-absorbing capacity of technical provisions and deferred taxes



Impact of using net or gross capital requirements to construct the single equivalent scenario

## Final results

Risk	Original Stress tests	Stress test in single equivalent scenario		
		Example 1	Example 2	Example 3
		Used weights (GROSS)	(NET) (the same LA effect)	(NET) (different LA effect)
A	25%	14%	14%	18%
B	-40%	- 34%	- 34%	- 28%
C	40%	39%	39%	38%

Remark: All three examples are copied from the Consultation paper 54.

# List of Used Literature

- Consultation papers CEIOPS 54
- Comments to consultation papers 54 (CEA, CRO Forum, Groupe Consultatif)
- CEIOPS' Advice for Level 2 Implementing Measures on Solvency II (Former CP 54)

Děkujeme za pozornost

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