



*Fondo Interbancario di Tutela dei Depositi*



# Deposit Guarantee Fund in the Banking System

**Summary**  
(Analytical Background)

**Informal Discussions**  
Bucharest, December 2005

**CONFIDENTIAL**

# This Is A “Convergence” Review

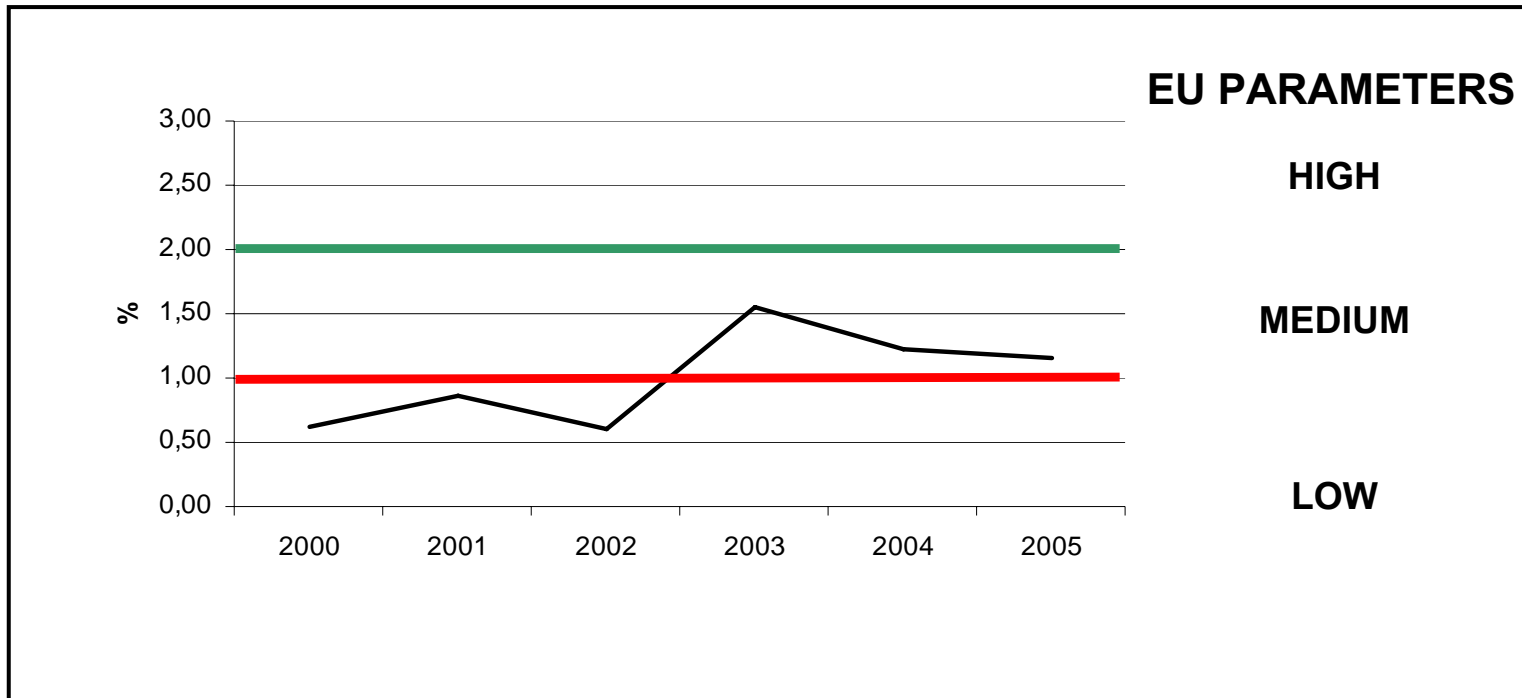
**“Convergence”**<sup>1/</sup> is a financial sector development program for South-East Europe focused on:

- Undertaking, as an “honest broker”, analytical tasks of micro-institutional issues as a basis for identifying solutions tailored to country circumstances
- Taking EU integration as a strategic perspective
- Building awareness of market participants, involving them in the search of market-building solutions, and fostering their dialogue with authorities
- Using the experience of regional former policy makers and local experts whenever possible
- Working in partnership with other institutions

# Notice

- This collection of slides is meant to support an oral presentation made by the Convergence-FITD team
- Slides could be fully understood only with the accompanying comments
- Readers that have not benefited from the oral explanations are invited to contact Mr. Shkelqim Cani, the Convergence Country Senior Advisor, ([shkelqimcani@yahoo.com](mailto:shkelqimcani@yahoo.com)) for assistance.

# Romania's Exposure Coverage Ratio (in % of Guaranteed Deposits)



- **Can DGF “withstand severe disturbances”?**
- **How will Exposure Coverage Ratio evolve, with premium declining further from 0.5% to 0.3%?**

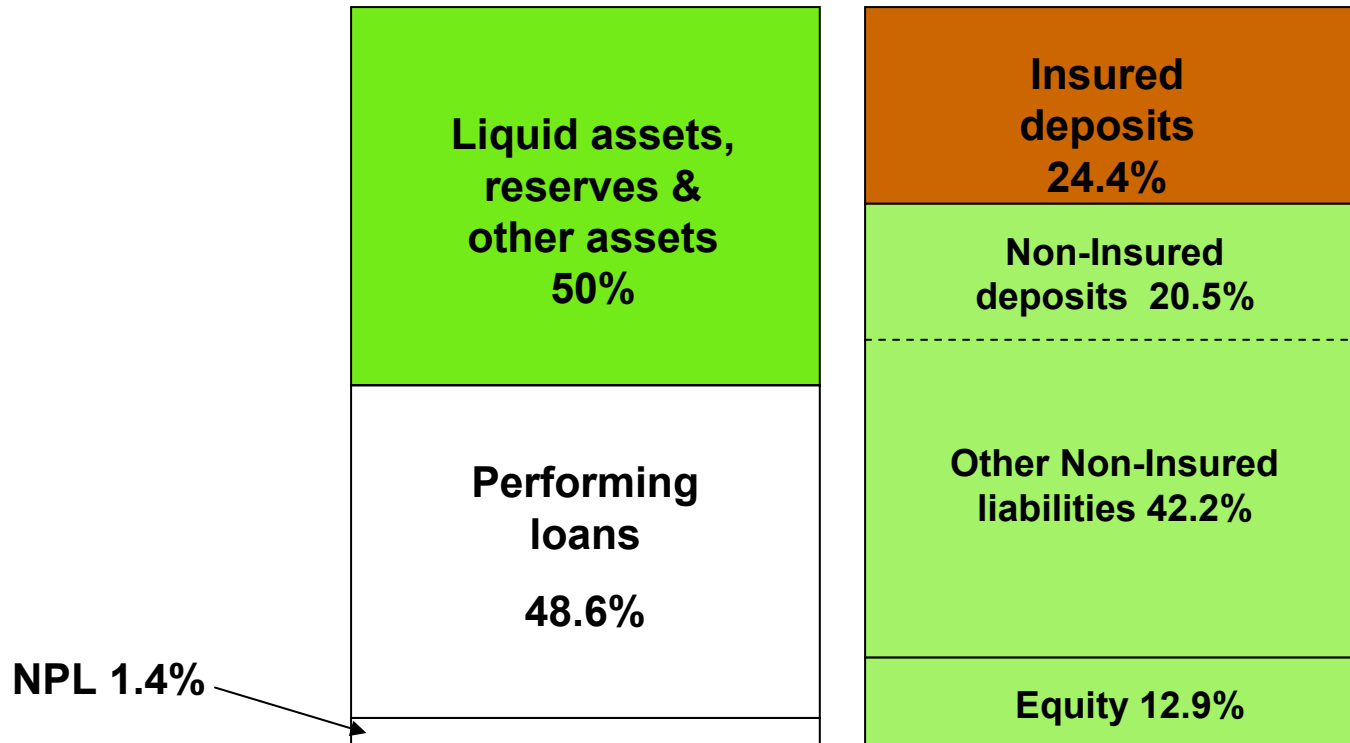
Note: For operational uses, we recommend Ratio as % of Insured Deposits

# Exposure Coverage Ratio Trend

	2004	2005	2006	2007
<i>Premium applied</i>	0.60%	0.50%	0.40%	0.30%
<b>DGF Liquid Assets (EoY)</b>	<b>96</b>	<b>140</b>	<b>196</b>	<b>251</b>
<b>ECR on guaranteed deposits (%)</b>	<b>1.22</b>	<b>1.32</b>	<b>1.36</b>	<b>1.45</b>

# Large Liquidity and Market Self-Insurance Shield DGF From Systemic Risk Exposure

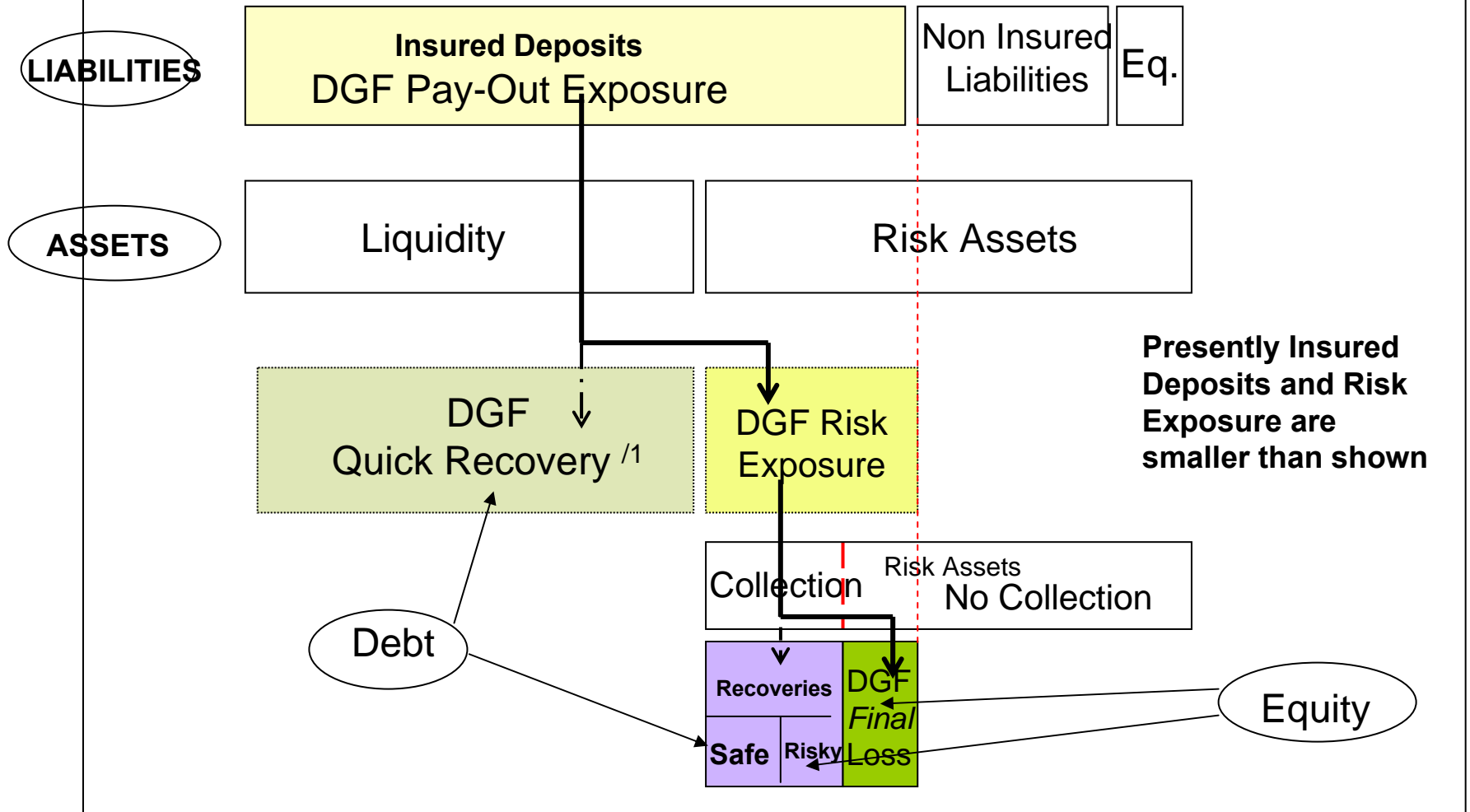
Romanian banking system end 2004 with  
EUR 10.000 coverage (base for 2005 premium)



... but what really matters is robustness of individual banks, because market self-insurance of bank A has nothing to do with bank B

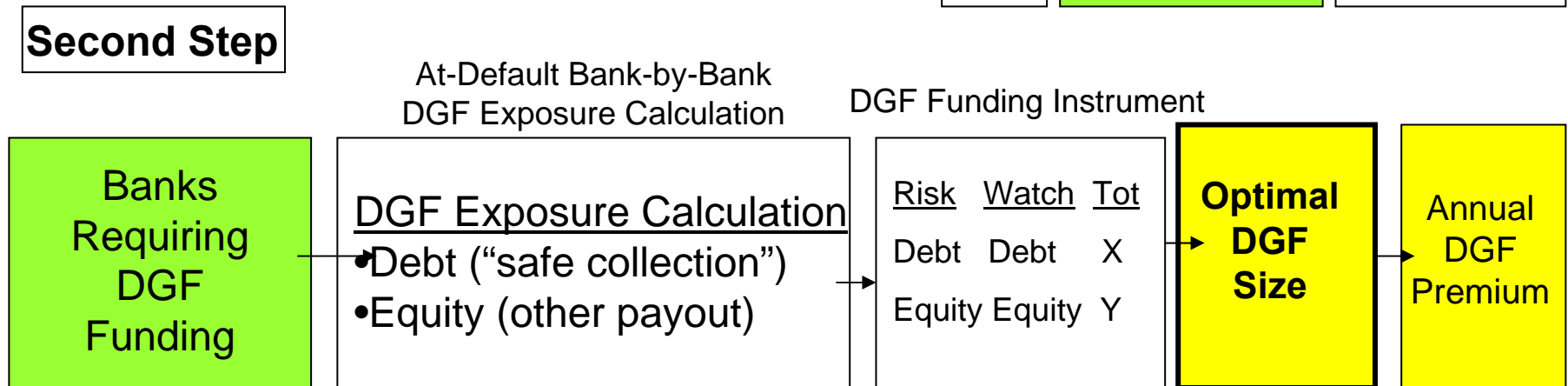
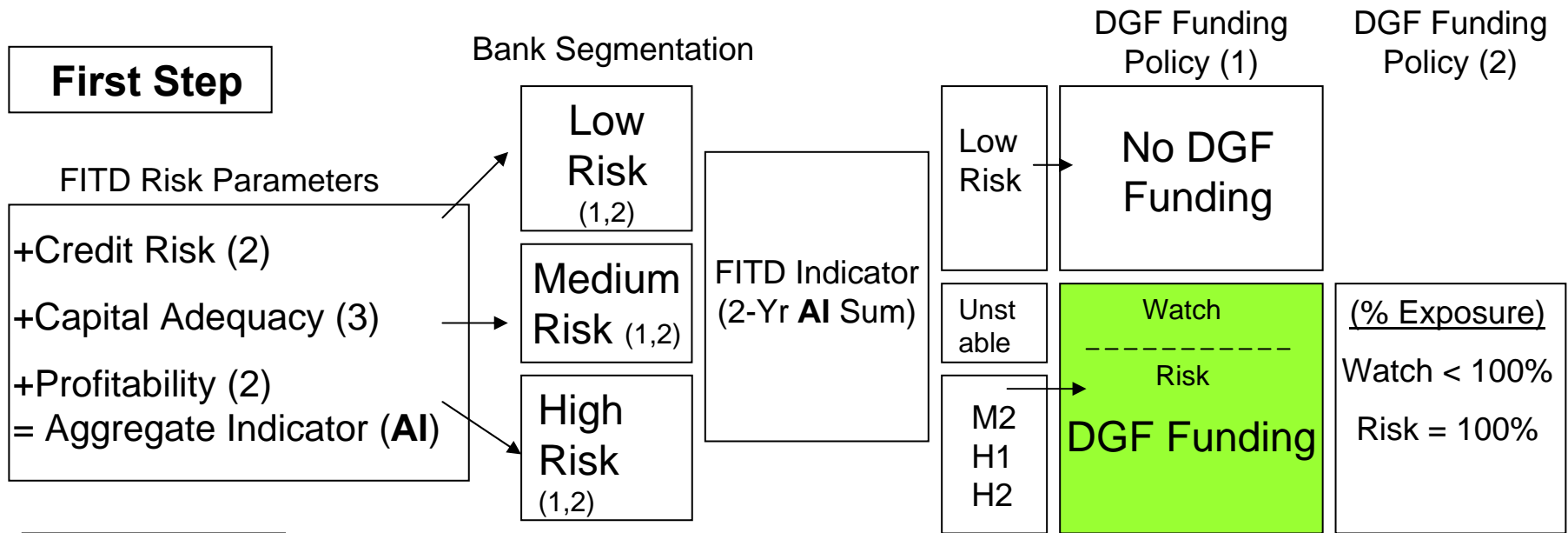
# DGF Pay-Out Exposure Higher Than Risk Exposure and Final Loss

## Conceptual Illustration



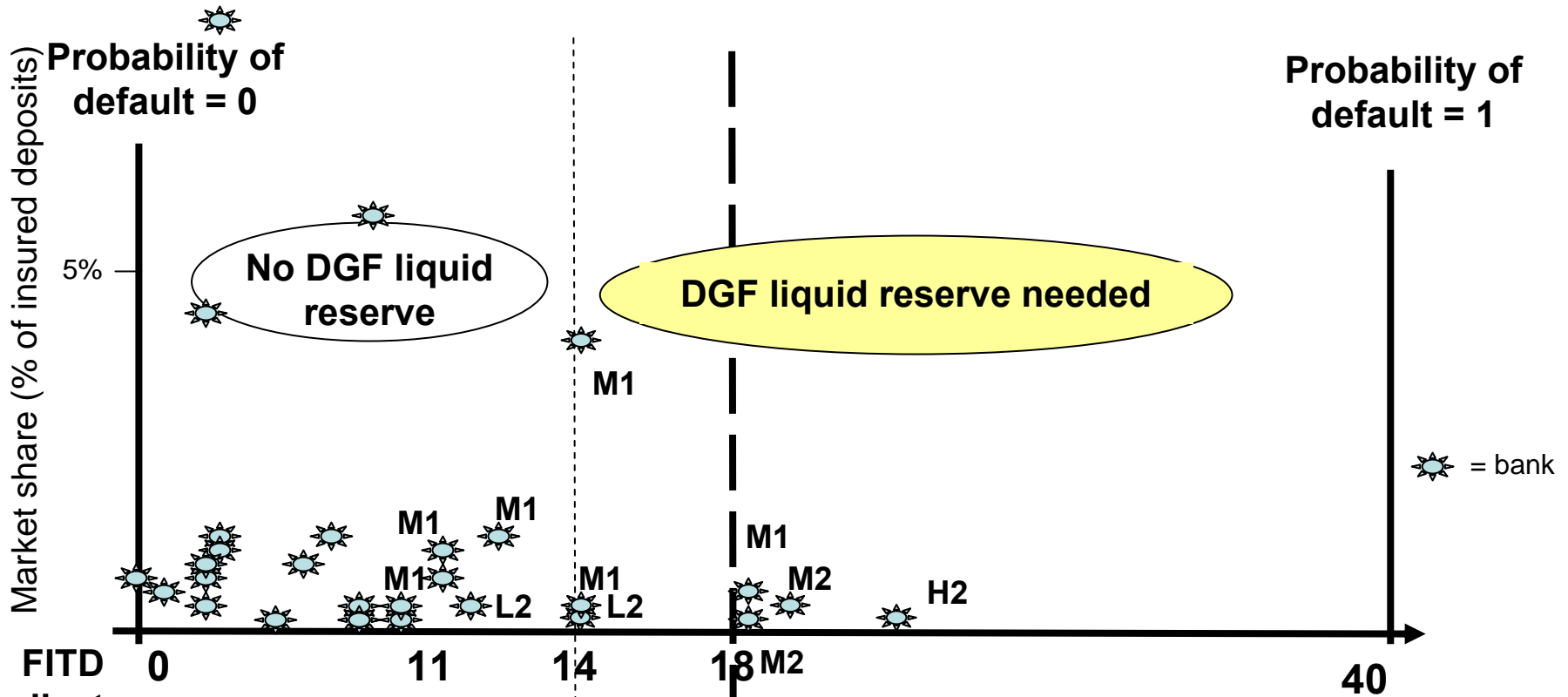
<sup>/1</sup> See suggested legal changes at the end of the presentation

# Our Risk-Based Pricing Methodology



# Early Warning Financial Ratios – Distance to Default (FITD Indicator Methodology)

Largest bank > 40%



Low Risk

Watch

Risk

94.7%

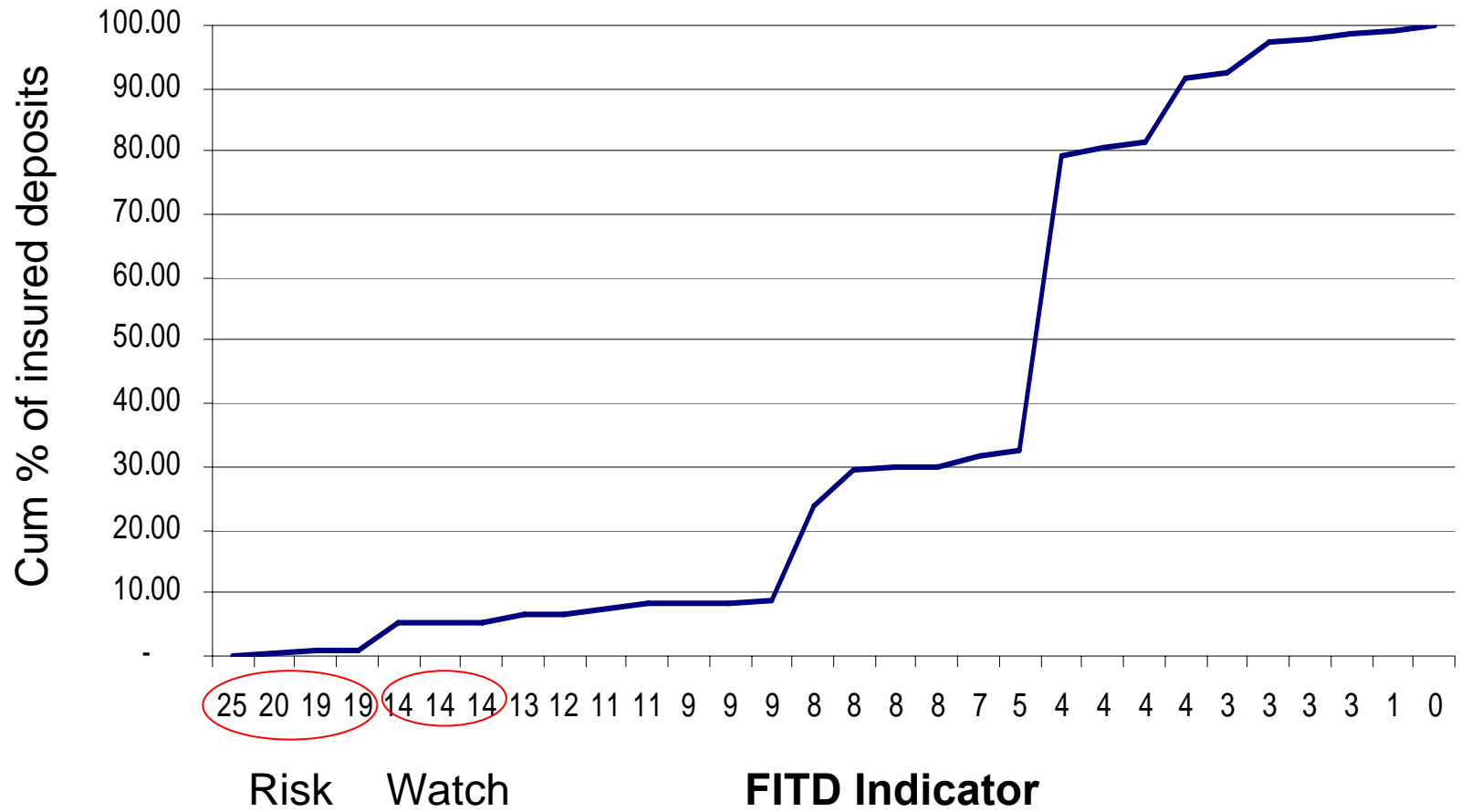
4.5%

0.8%

Banks' share in insured deposits

L2= Higher Low risk  
M1=Lower Medium risk  
M2=Higher Medium risk

# Highest Risk Ratings In Smaller Banks



# Details on Watch and Risk Banks

EUR million at 2004 e.o.y. exchange rate	<i>Risk</i>	<i>Watch</i>	
<b>Starting point (before bankruptcy)</b>			Remarks
No. of banks	<b>4</b>	<b>3</b>	
Average FITD Indicator (weighted)	<b>21/40</b>	<b>14/40</b>	
Risk assets	<b>253</b>	<b>393</b>	Proxied by net loans
Non insured liabilities (NIL)	<b>382</b>	<b>484</b>	Non insured deposits, loans & equity
Liquid assets	<b>166</b>	<b>304</b>	Proxied by total assets minus loans
Insured deposits	<b>37</b>	<b>213</b>	
DGF Pay-Out Exposure (% of ID)	<b>0.8%</b>	<b>4.5%</b>	Coverage 10.000 EUR
Min Loan Loss (LGD) for insolvency	<b>32%</b>	<b>23%</b>	Equal to equity / risk assets ratio
NIL/Risk Assets	<b>1.5x</b>	<b>1.2x</b>	
Liquid Assets/Insured Deposits	<b>4.5x</b>	<b>1.4x</b>	
<b>At insolvency</b>			
LGD / loans	<b>40%</b>	<b>31%</b>	Team assumption
Withdrawal of insured deposits	<b>20%</b>	<b>20%</b>	Team assumption
Withdrawal of non insured liabilities	<b>44%</b>	<b>50%</b>	Team assumption; 44% for high risk banks because of liquidity limitation
DGF Pay-Out Exposure (as % of ID)	<b>0.6%</b>	<b>3.6%</b>	After withdrawals
Liquidity (as % of ID)	<b>0.0%</b>	<b>1.4%</b>	
DGF Risk Exposure (as % of ID)	<b>0.6%</b>	<b>2.2%</b>	Nom.Exp. minus liquid assets

# Results of Withdrawals and Losses

		<i>Risk</i>		<i>Watch</i>	
		Before insolvency	At insolvency	Before insolvency	At insolvency
Risk assets	1	<b>253</b>	<b>152</b>	<b>393</b>	<b>272</b>
Liquid assets	2	<b>166</b>	<b>0</b>	<b>304</b>	<b>65</b>
Non insured liabilities*	3	<b>382</b>	<b>115</b>	<b>484</b>	<b>166</b>
Insured deposits	4	<b>37</b>	<b>30</b>	<b>213</b>	<b>171</b>
DGF Risk Exposure	5=4-2	<b>-129</b>	<b>30</b>	<b>-91</b>	<b>106</b>
DGF Loss if collection of risk assets less than (in % of risk assets)	6= 5/1		<b>19,7%</b>		<b>39,0%</b>
Minimum expected risk assets collection (in % of risk assets)	7		<b>20,0%</b>		<b>20,0%</b>
Minimum expected risk assets collection in % of risk exposure	8=7/6		<b>102,0%</b>		<b>51,3%</b>

\* Equity included

# Implications for DGF

% of ID		<i>Risk</i>	<i>Watch</i>	<i>Total</i>	Funding Instrument
DGF Pay-Out Exposure	1	0.6%	3.6%	4.2%	Short-Term debt
Liquid Assets Recovery	2	0.0%	1.4%	1.4%	
DGF Risk Exposure	3=1-2	0.6%	2.2%	2.8%	Long-Term debt
20% risk asset collection	4	0.6%	1.1%	1.7%	
<b>"Uncovered" collection risk</b> (eventual collections plus final loss)	5=3-4	0.0%	1.1%	1.1%	Equity
("Safe" Collections)	6=2+4	0.6%	2.5%	3.1%	Total Debt

## What are DGF financial policy implications?

Should DGF be fully funded (4,2% of insured deposits)?

Or should DGF funding reflect probabilities of default that are lower than 100%?

# Financial Policy Implications: Calculating Optimal Coverage Ratio

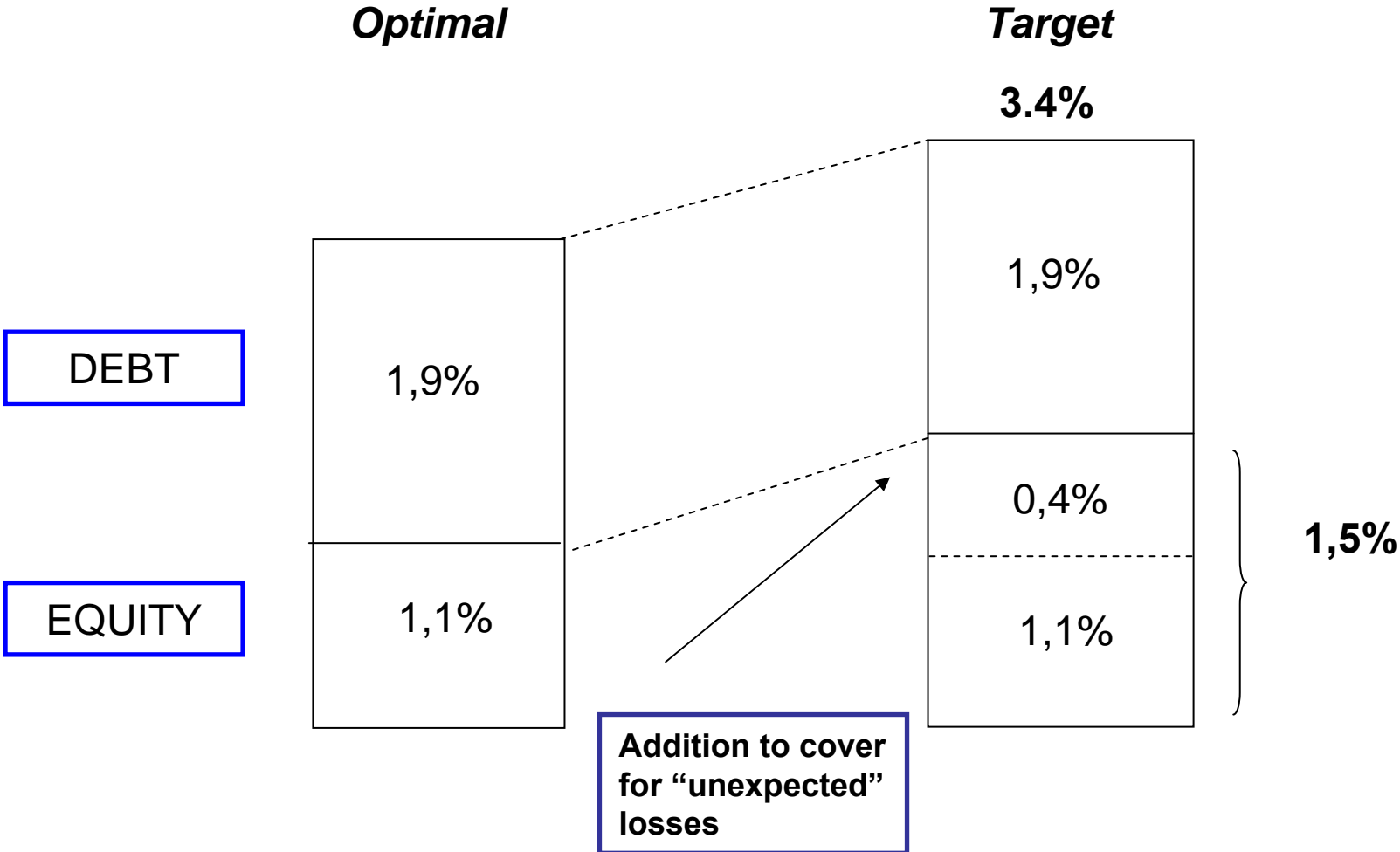
end 2004 data		<i>Risk</i>	<i>Watch</i>	<i>Total</i>
<b>Before insolvency</b>				
Insured deposits (EURm)	1	37	213	250
FITD Probabilities of default	2	47,5%-62,5%	35.0%	
<b>At insolvency</b>				
Initial payout in % of ID	3	0.6%	3.6%	4.2%
o/w "safe" recoveries	4	0.6%	2.5%	3.1%
o/w possible final loss	5=3-4	0.0%	1.1%	1.1%
<b>DGF Funding Ratio</b>				
% Debt for "safe" recoveries	6	100.0%	50%	
% Equity for possible final loss	7	100.0%	100%	
<b>DGF Funding Instrument (in % of ID)</b>				
Debt	8	0.6%	1.3%	1.9%
Equity	9=5x7	0.0%	1.1%	1.1%

All watch and high risk banks don't fail immediately (actual PDs are less than 100%). It is prudent to build financial potential in time by applying different % of funding reserve for different groups of banks and different instruments.

EUR million
105+
65

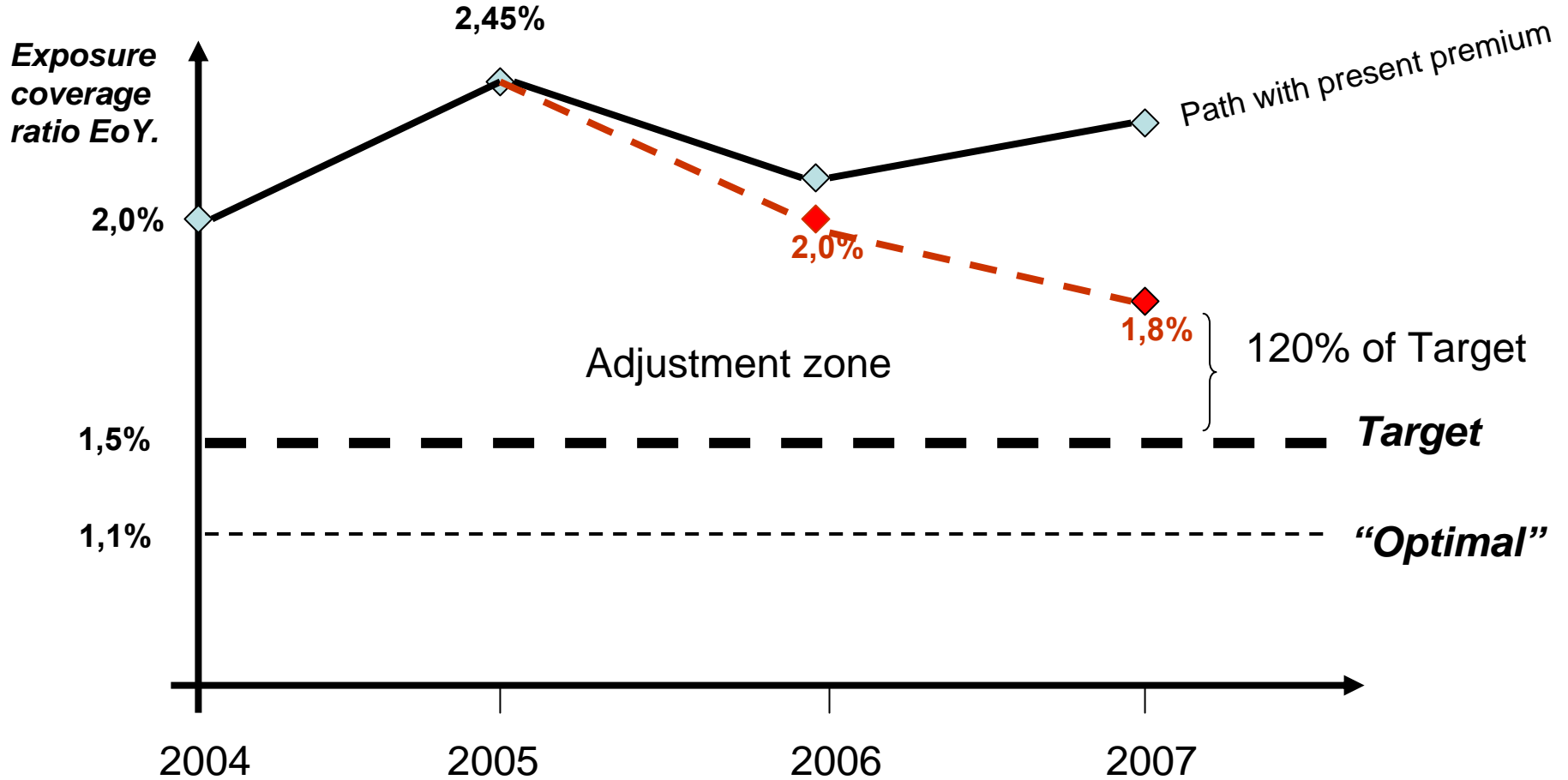
# Financial Policy Implications: From Optimal to Target Coverage Ratio

% Of Insured Deposits

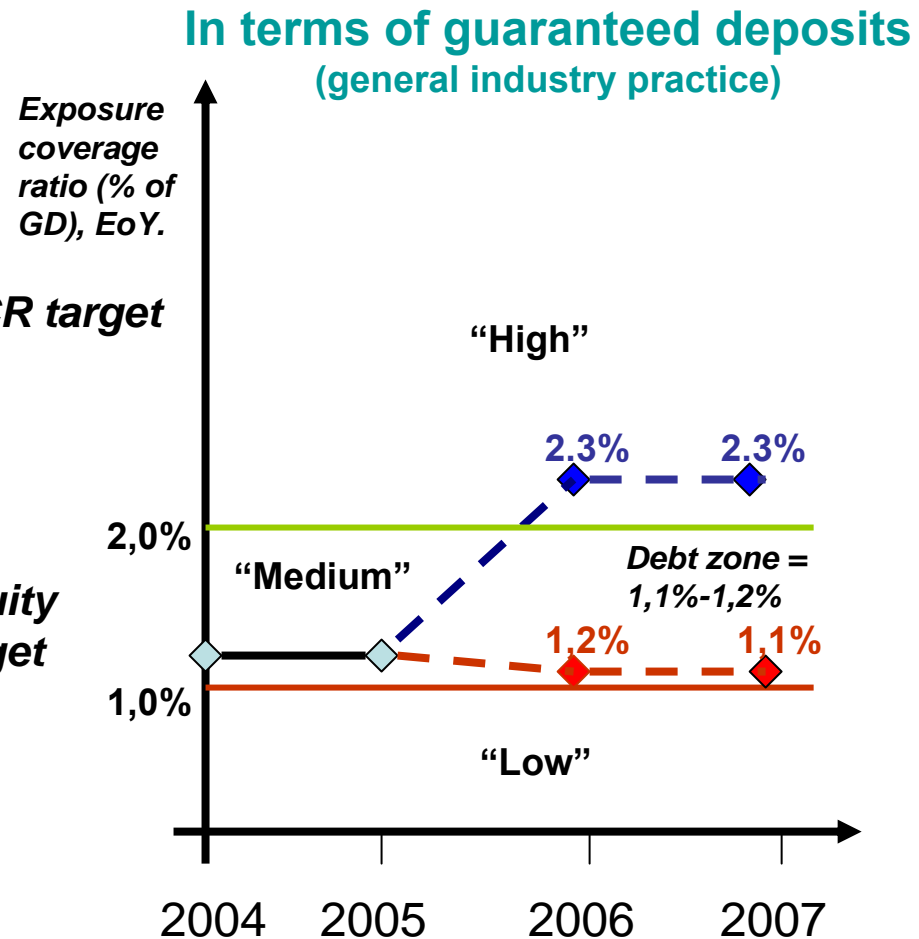
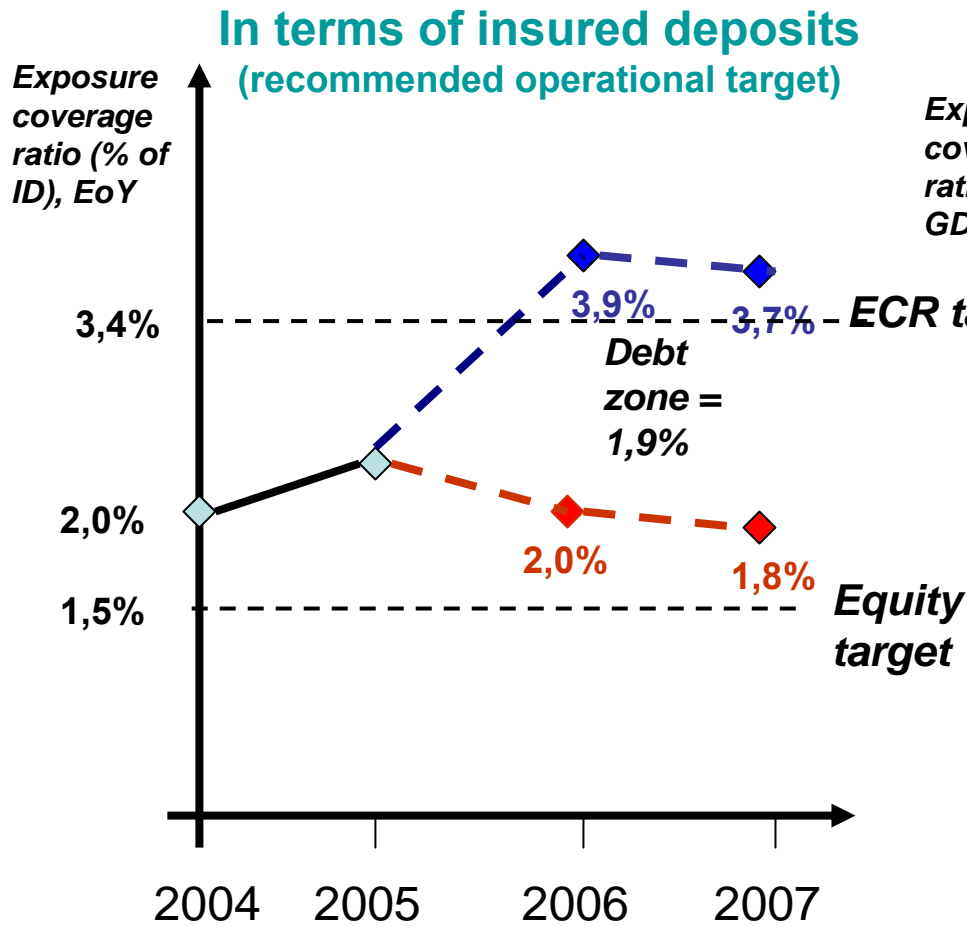


# Financial Policy Implications: From Actual to Target Equity Coverage Ratio

% Of Insured Deposits



# Financial Policy Implications: From Actual to Target with Debt

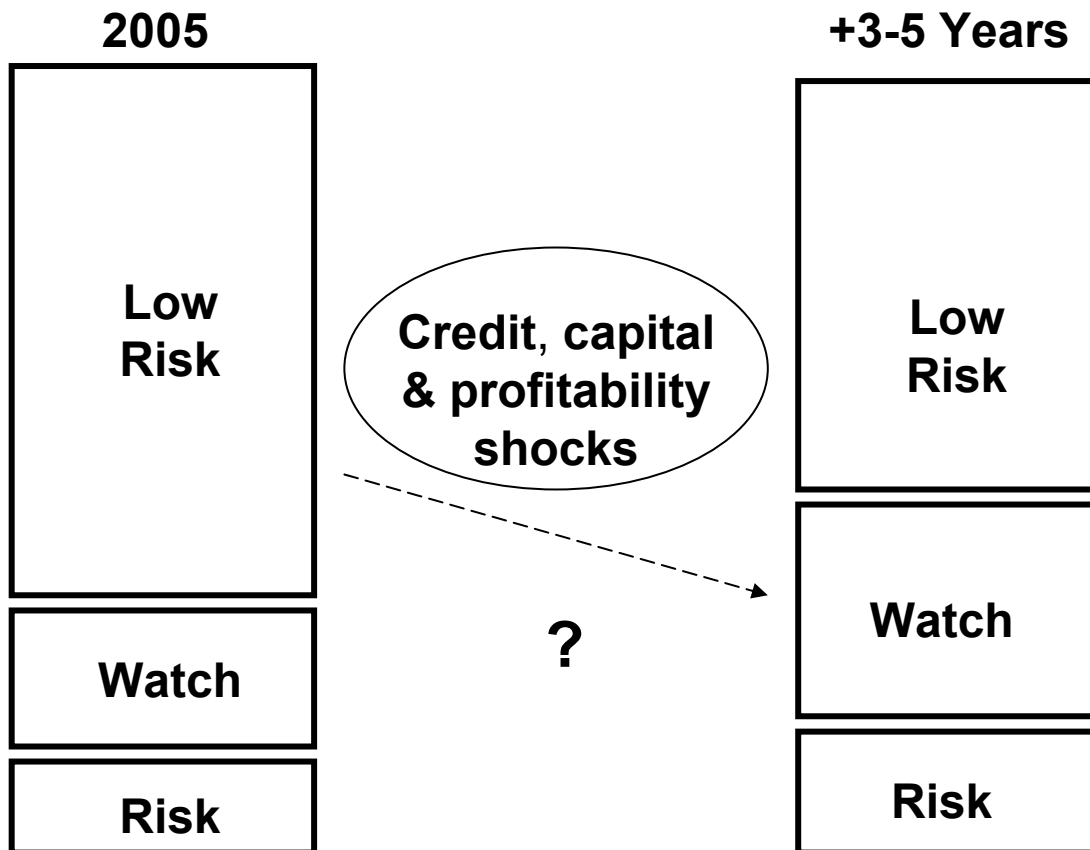


# Premium And Stand-By Calculations

EURm	2004	2005	2006	2007
<b>DGF Liquid Assets (EoY)</b>	<b>96</b>	<b>140</b>	<b>171</b>	<b>195</b>
<b>ECR (EoY) [2006-2007 Target]</b>	<b>2.02</b>	<b>2.45</b>	<b>2.01</b>	<b>1.81</b>
<i>Premium applied</i>	<i>0.60%</i>	<i>0.50%</i>	<b>0.20%</b>	<b>0.10%</b>
<b>ECR (D+E) (EoY) [2006-2007 Target]</b>	<b>2.02</b>	<b>2.45</b>	<b>3.91</b>	<b>3.71</b>
<i>Stand-by line of credit</i>			<b>+162</b>	<b>+42</b>
<b>ECR on guaranteed deposits (EoY)</b>	<b>1.22</b>	<b>1.32</b>	<b>1.19</b>	<b>1.12</b>
<b>Total ECR (debt + equity) on guaranteed deposits (EoY)</b>	<b>1.22</b>	<b>1.32</b>	<b>2.31</b>	<b>2.30</b>

**Notes:**  
 Guaranteed deposits growth in 2005: 35%, 2006: 20%, 2007: 20%  
 Insured deposits growth: 20%  
 Investment in 2005: 85% (with 8,5%) and 15% (with 17%); from 2006 onwards 6%  
 Data on insured deposits end 2004 corresponds as insured beginning 2005 i.e. Coverage 10.000 not 6.000 Euro  
 Exchange rate: 31st December 2004; i.e. 39663

# A 3-5 Year Sensitivity Scenario (Can DGF Absorb a Shock?)



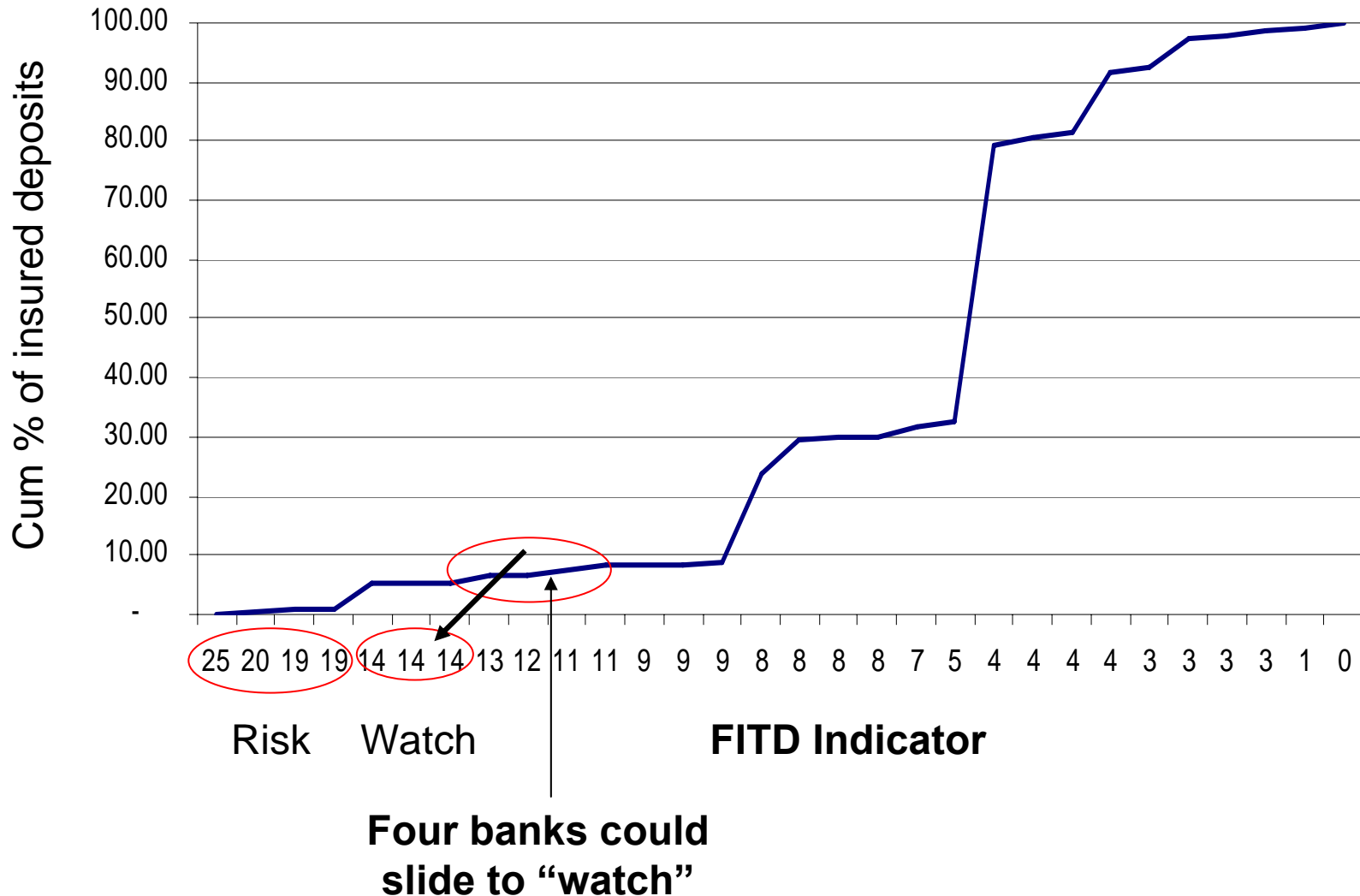
## Two Key Questions:

1) Under proposed new DGF financial policies, what are the impacts of these shocks on:

- Additional debt support?
- Optimal DGF Equity?
- Annual premium?

2) Do the proposed new DGF financial policies create a sufficient buffer for these adjustments to be affordable to the banking system (over a 2-year period starting in 3 years from now)?

# What Happens if Some Banks Migrate from Low Risk to “Watch”?



# How Can Low Risk Banks Turn “Watch”?

BASE SCENARIO						
(T-2) + (T-1) Risk Indicators						
Bank	R1	R2	C	P1	P2	<u>FITD</u>
x1	6	3	0	0	4	13
x2	5	6	0	0	1	12
x3	1	2	0	4	4	11
x4	1	0	4	2	4	11

SHOCK SCENARIO							
T Indicators							
Bank	R1	R2	C	P1	P2	AI	<u>FITD</u>
x1	2	2	1	0	2	7	Δ1
x2	2	2	1	0	1	6	Δ2
x3	4	2	0	2	2	10	Δ3
x4	4	2	1	1	2	10	Δ3

Two warning zone risk indicators for weaker banks to turn “watch”

Legenda:

Ratio	Class	Normality	Attention	Warning	Violation
	Coefficient	0	1	2	4
<b>R1</b> <i>Doubtful loans+ Loss / Total Assets</i>		up to 2	from 2 up to 4	from 4 up to 6	over 6
<b>R2</b> <i>Doubtful loans+ Loss / Tot loans to clients</i>		up to 5	from 5 up to 10	from 10 up to 15	over 15
<b>C</b> <i>Capital Adequacy</i>		3 ratios respected	1 ratio not respected	2 ratios not respected	3 ratios not respected
<b>P1</b> <i>Operating expences / Total income</i>		up to 70	from 70 up to 80	from 80 up to 90	over 90
<b>P2</b> <i>Gross Profit / Total income</i>		over 10	from 5 up to 10	from 0 up to 5	less than 0

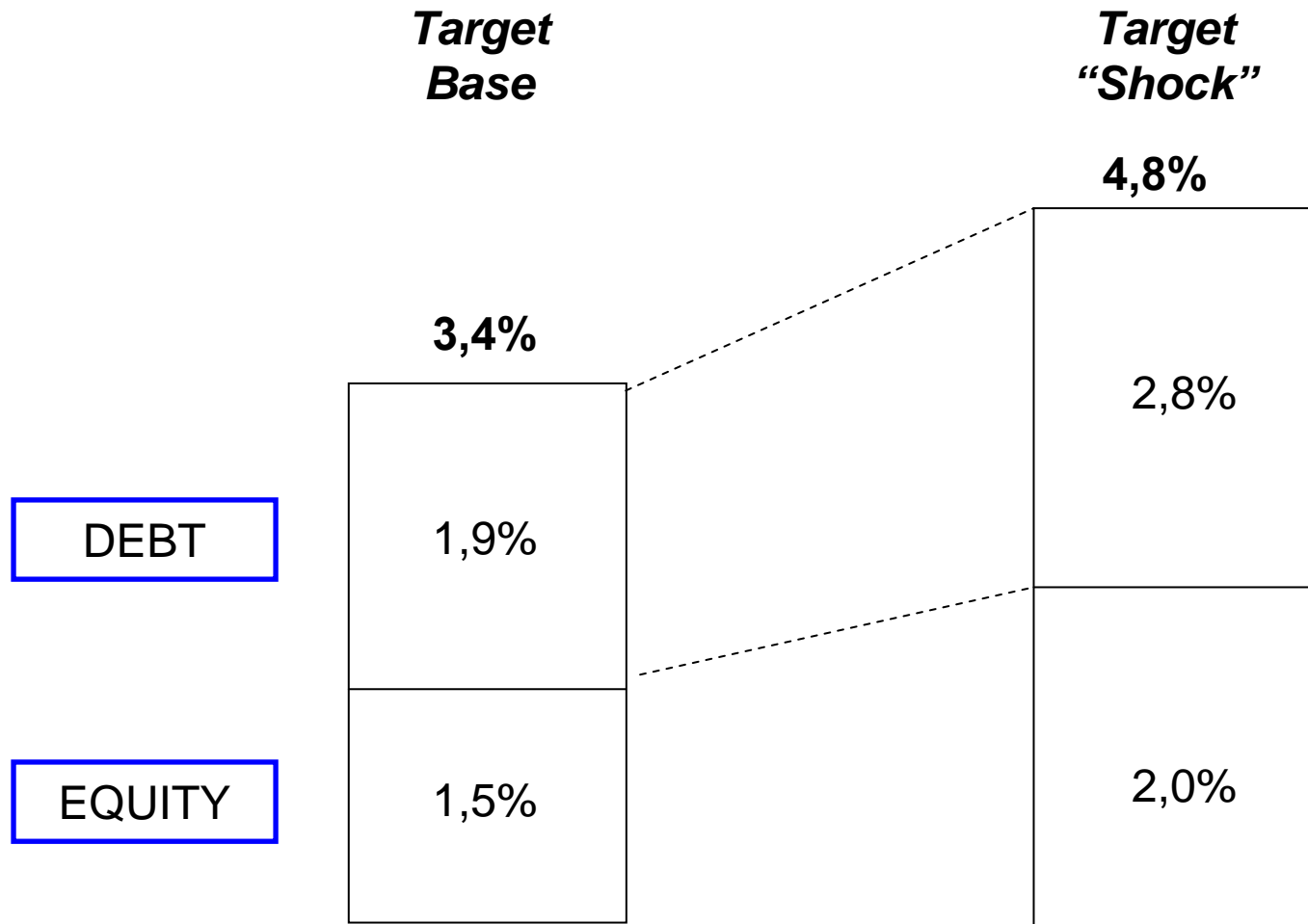
Class	AI	Macro-Class
L1	0 - 2	Low Risk
L2	3 - 5	
M1	6 - 8	Medium Risk
M2	9 - 10	
H1	11 - 12	High Risk
H2	oltre 12	

# What Do Four More “Watch” Banks Mean For DGF Size?

% of ID		<i>Risk</i>	<i>Watch</i>	<i>Total</i>	<i>New Watch</i>	<i>New Total</i>
DGF Pay-Out Exposure	1	0.6%	3.6%	4.2%	2.3%	6.5%
Liquid Assets Recovery	2	0.0%	1.4%	1.4%	1.5%	2.9%
DGF Risk Exposure	3=1-2	0.6%	2.2%	2.8%	0.8%	3.6%
20% risk asset collection	4	0.6%	1.1%	1.7%	0.4%	2.1%
<b>"Uncovered" collection risk</b> (eventual collections plus final loss)	5=3-4	0.0%	1.1%	1.1%	0.4%	1.5%
("Safe collections")	6=2+4	0.6%	2.5%	3.1%	1.9%	5.0%
<b>DGF Funding Ratio</b>						
% for recoveries (debt)		100%	50%		50%	
% for possible loss (equity)		100%	100%		100%	
<b>DGF Funding Instrument (% ID)</b>						
Debt		0.6%	1.3%	1.9%	1.0%	2.8%
Equity		0.0%	1.1%	1.1%	0.4%	1.5%

# Financial Policy Implications: Target Coverage Ratio with Four New Watch Banks

% Of Insured Deposits



# “Post-Shock” Financial Requirements

	2006	2007	2008	2009
<i>Premium applied</i>	0.20%	0.10%	0.30%	0.20%
ECR (equity) (EoY)	2.01	1.81	2.00	2.04
<i>Increase in Stand-By Line of Credit (EURm)</i>	+162 <sup>1</sup>	+42	+132	+106
ECR (debt + equity) (EoY)	3.91	3.71	4.61	4.89

**With premium back to 0.3% and 0.2% in 2008 and 2009 and with additional debt, DGF size remains on target after shock.**

1/ Size of the initial stand-by

# Conclusions

## Immediate Actions

- Lower base annual premium from 0.4% to 0.2% in 2006 and from 0.3% to 0.1% in 2007 – article 9(1)
- Starting in 2008 set up the cap on base premium at 0.5%, <sup>/2</sup> transferring the responsibility for calculating lower premium to DGF with NBR endorsement – article 9(1)
- Negotiate EUR 150m stand by loan facility with banks in order to boost DGF's credibility in the eyes of depositors when premium is coming down to unprecedented levels - article 14(1)

## Longer Term Actions

- Explore the need to amend legal framework in order to ensure prompt collection (by the bankruptcy administrator) of reserves and other liquid assets. Also ensure rapid distribution of liquid assets to the DGF
  
- Ensure strong collection orientation of bankruptcy administrators and rapid distribution of remaining collected values to DGF

<sup>/2</sup> We recommend the post 2007 cap that is higher than the proposed 2007 premium in order to allow for premium flexibility upwards in case authorities would need to rebuild cash reserve after eventual later payout interventions.

# Conclusions (continued)

- Improve DGF risk monitoring activities in cooperation with NBR, especially with regards to:
  - analysing banks' risks (to identify “watch” and “risk” banks)
  - financial forecasting and DGF cash flow projections
  - calculating desired premium
  - doing annual long-term simulations of changes in financial structure (emphasising non-insured liabilities and liquidity evolution) and using bank-by-bank stress testing possibly with more refined structures of assets and liabilities (risk and residual maturity composition)
- Authorities should allow investment of DGF's assets in NBR bills and foreign riskless assets in order to bring investment policy in line with prudential standards
  - And avoid FX exposure.

# Conclusions (continued)

- Stand by line of credit should be extended in proportion to “safe recovery” assets, hence minimizing the probability of creditor banks’ loss.
- Initial amount of EUR 150m should be re-negotiated annually
  - ST component is proportional to quick recovery liquid assets and the term should be adjusted accordingly.
  - LT component is proportional to safe recovery from risk assets and the term should be adjusted to the expected speed of recovery in bankruptcy
- Stand-by creates compatible public-private incentives to improve bankruptcy legislation, speed up recovery process and increase its efficiency, with a possible facilitating role of banks.

# Convergence FITD Technical Team

- **Velimir Sonje** (Project Technical Co-Leader; former Executive Director for Research and Statistics, Croatian National Bank; Member of the Board, Raiffeisenbank Austria d.d. Zagreb, presently CEO of Arhivanalitika Consulting)
- **Alessio Veccia** (Project Technical Co-Leader, presently office manager of the FITD's Research and Data Analysis Department)
- **Djurdjica Ognjenovic** (Deposit Insurance Specialist; former Head of Department, Croatian Deposit Insurance Fund, Advisor to Deposit Insurance Authorities in Serbia and Montenegro and Armenia, consultant at Arhivanalitika)
- **Manuela De Cesare** (Deposit Insurance Specialist, former consultant in Meliorbanca Italia, presently vice office manager of the FITD's Research and Data Analysis Department)