



Deposit Guarantee Fund in the Banking System

Summary of Preliminary Findings Draft for Consultations

Deposit Guarantee Fund, National Bank of Romania
and Romanian Banking Association
Bucharest, September 20-21 2005

CONFIDENTIAL

This Is A “Convergence” Review

“Convergence”¹ is a World Bank-sponsored financial sector development program for South-East Europe focused on:

- Undertaking analytical tasks of micro-institutional issues calling for solutions tailored to country circumstances
- Taking EU integration as a strategic perspective
- Building awareness of market participants and involving them in the search of market-building solutions
- Fostering dialogue between authorities and market participants to identify workable solutions in local context
- Using the experience of regional former policy makers and experts whenever possible

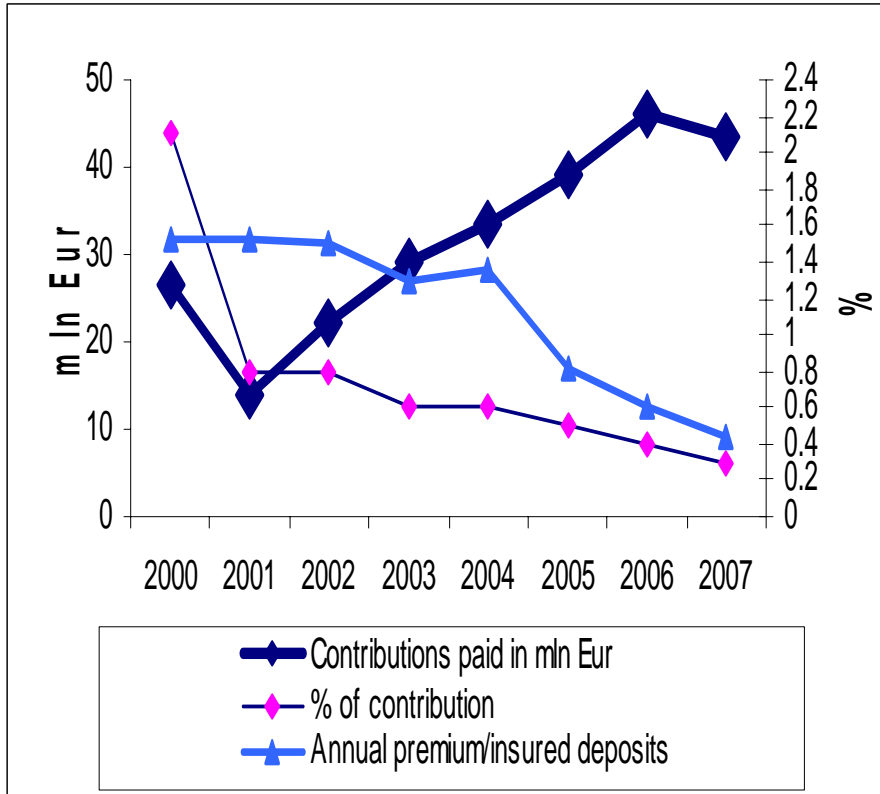
The Assignment

- Romanian authorities wish to make an updated assessment of the level of banks' contributions to the Deposit Guarantee Fund (DGF)
 - *“This assessment should take into consideration the latest developments in the Romanian banking sector, the international practice, as well as the need to maintain a well-funded guarantee scheme to preserve the confidence of depositors.”*
 - » DGF Letter to Convergence, May 2005
- “Convergence” works with the Italian Deposit Guarantee Fund (FITD)

Are DGF Resources Too High or Too Low?

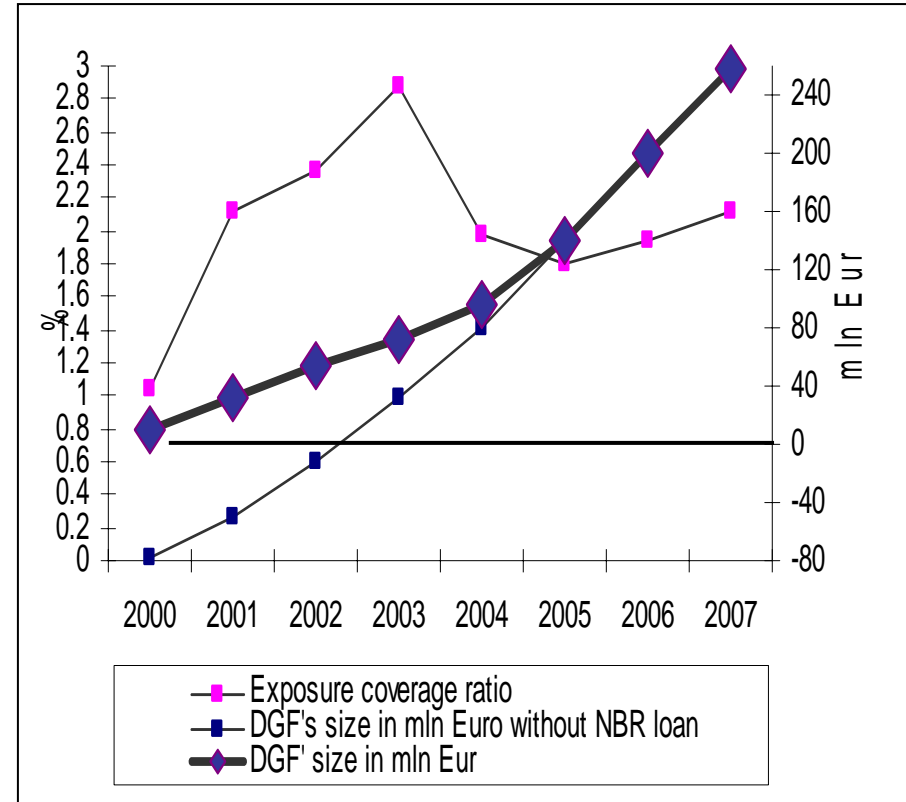
Annual Premium

Premium is dropping fast; annual payment up



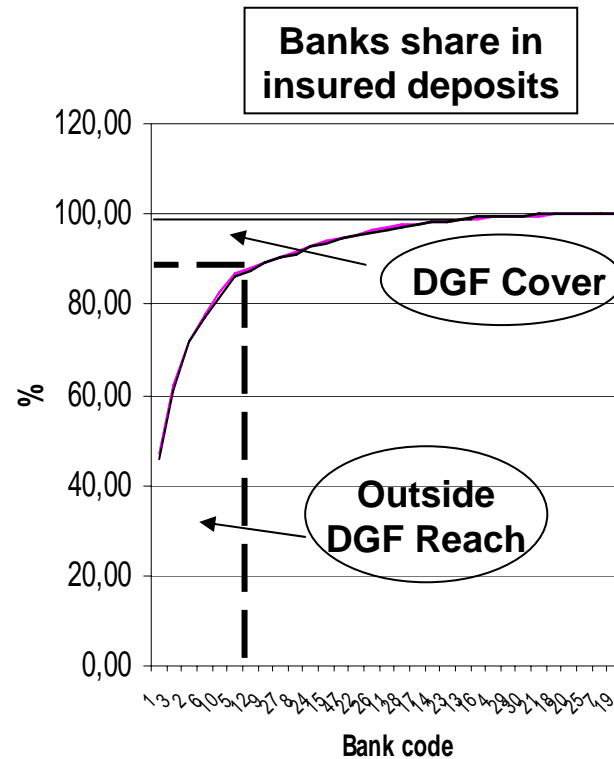
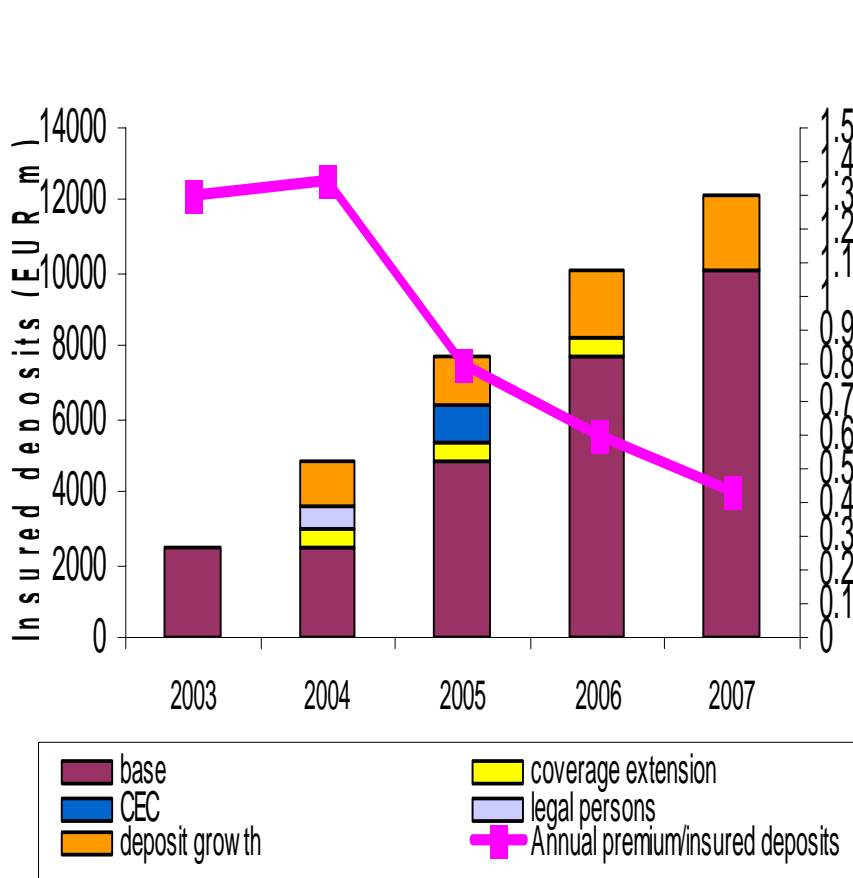
DGF Size

Size will be doubling over next 2 years; but relative size stabilizing at 2%



2005 DGF Size Only 30% Higher Than 2000 Pay-Out

Can Premium Be Decreased Further While Coverage Is Doubling Over 3 Years?



And DGF Can Cover Only Bottom 15% of the Market?

At Bankruptcy, DGF Covers Only “Residual” Risk

Simplified Analysis

Assets	Liabilities
RISKS	INSURED DEPOSITS (DGF)

We need to focus on real balance sheet structures

DGF is commonly misperceived to carry the entire risk of the banking system assets, per this stylized balance sheet structure.

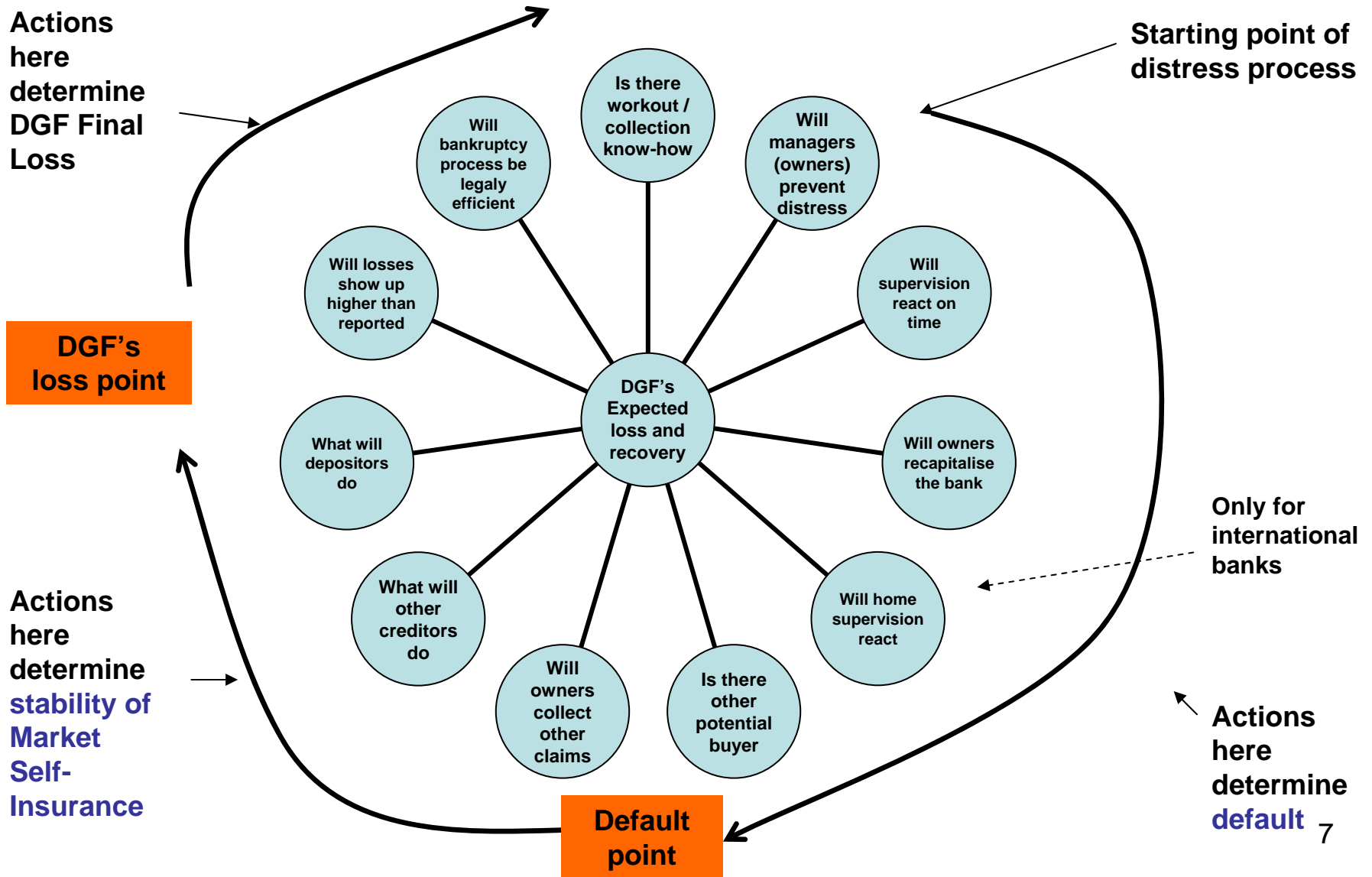
More Realistic Analysis

Assets	Liabilities	
Liquid assets & reserves	Insured deposits	DGF's Nominal Exposure
Performing assets	Non-insured liabilities	
Loan Losses	Equity	Market Self-Insurance

Discussion:

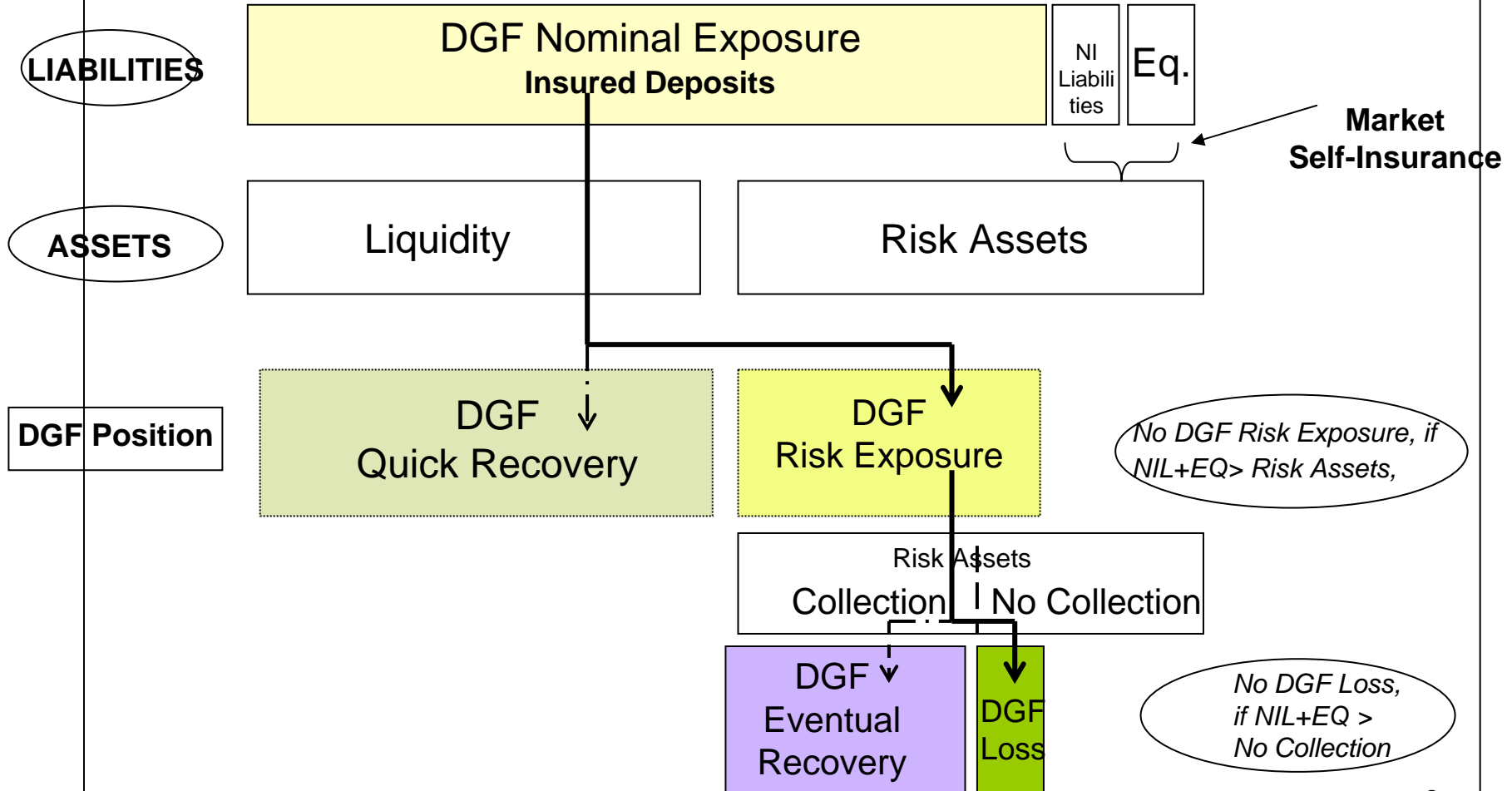
- DGF Nominal Exposure activated at bankruptcy (when Loan Losses > Equity)
- But no DGF Risk Exposure if Liquid Assets > Insured Deposits
- And no DGF Loss, if recoveries from liquid assets, performing loans and other assets eventually cover its Nominal Exposure
- DGF Loss only if Loan Losses exceed Market Self-Insurance

DGF Loss: After A Long Distress Path

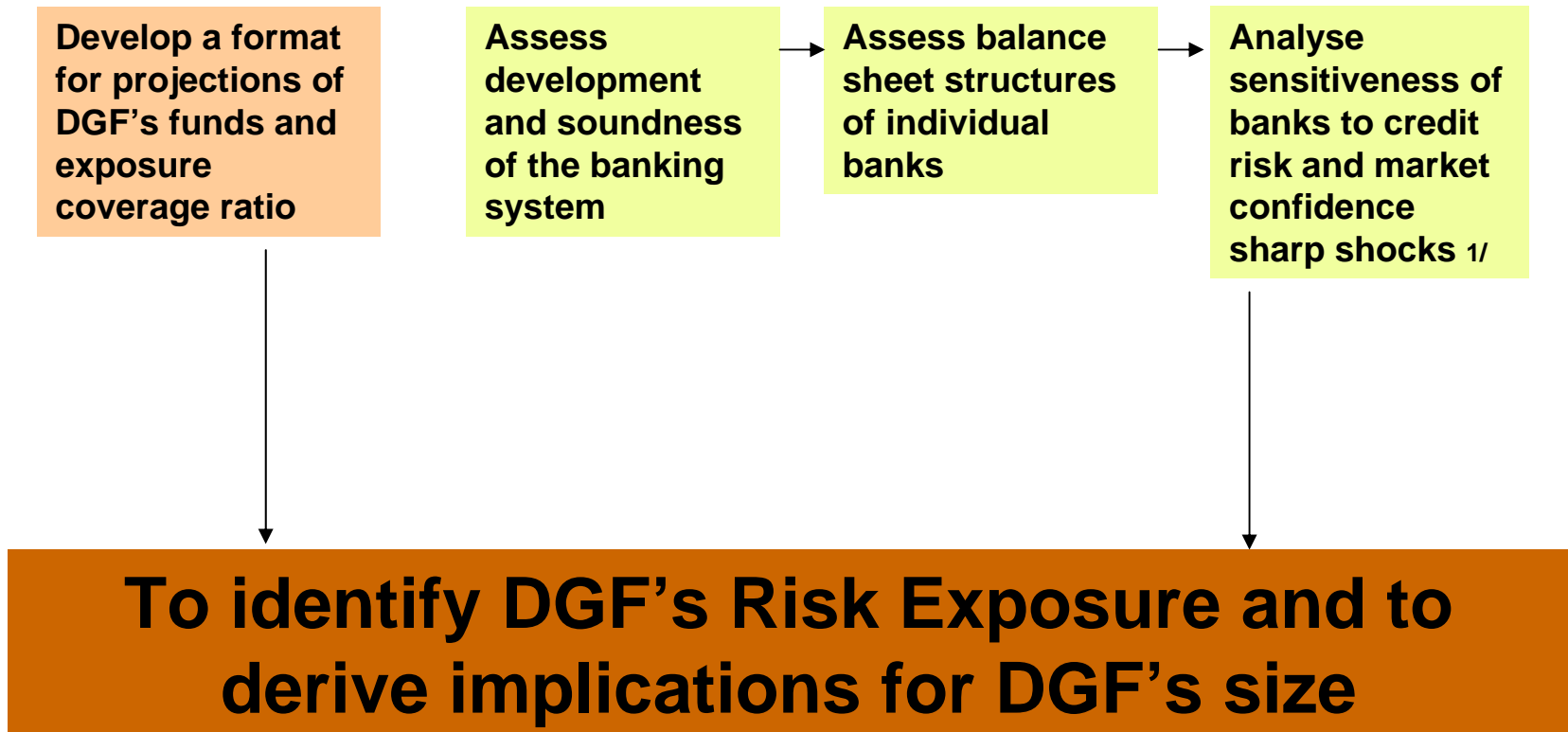


DGF: From Nominal Exposure To Loss

Conceptual Illustration



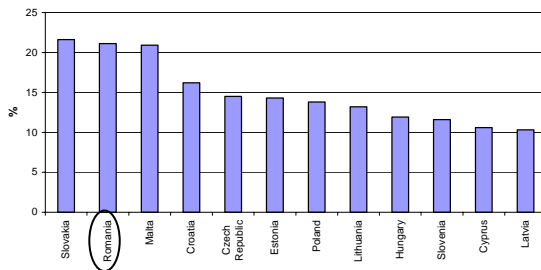
Our Methodology



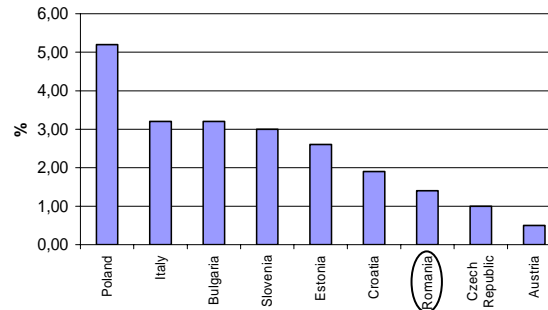
1/ Shock scenarios should represent cumulative effect of negative events over DGF's financial policy horizon (about 3 years)₉

Sound Banking Indicators

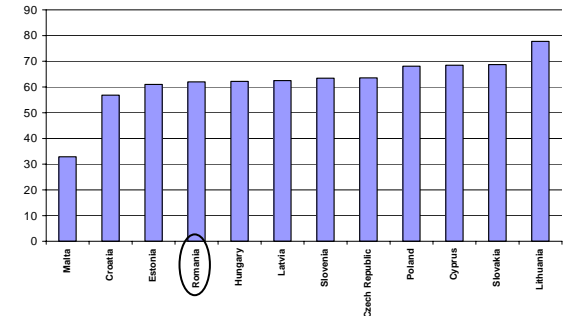
Capital Adequacy 2003



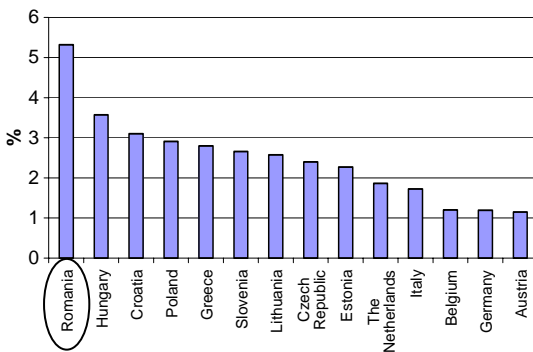
Bad (D&E) loans to total assets 2003



Cost/income ratio 2003



Net interest margin: comparison 2004



Returns and net interest margin 2000 - 2004

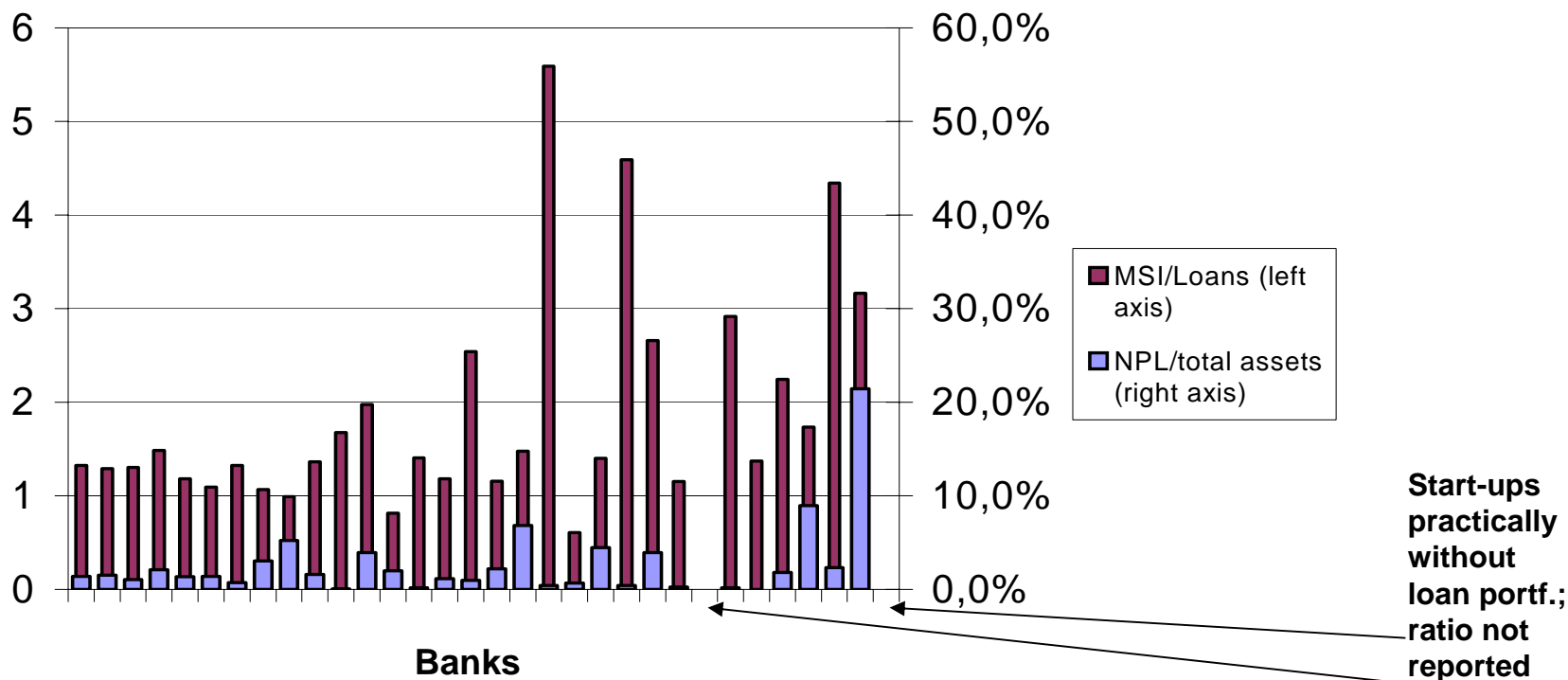


Banking system appears sound, with a good perspective to continue to attract capital and generate sufficient profits

Banks Seem Fairly Robust

Non-Insured Liabilities Greater Than Most Loan Portfolios

Banks are sorted according to size, from large banks (left) to small banks (right)



On average, smaller banks have relatively higher equity buffer and Market Self-Insurance. Market pressures lead them to “buy” confidence and reputation by holding higher equity buffers.

Note: Bank 23 has likely error in data

Similar Results With FITD Methodology

Risk Rating Methodology

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	More than 12	



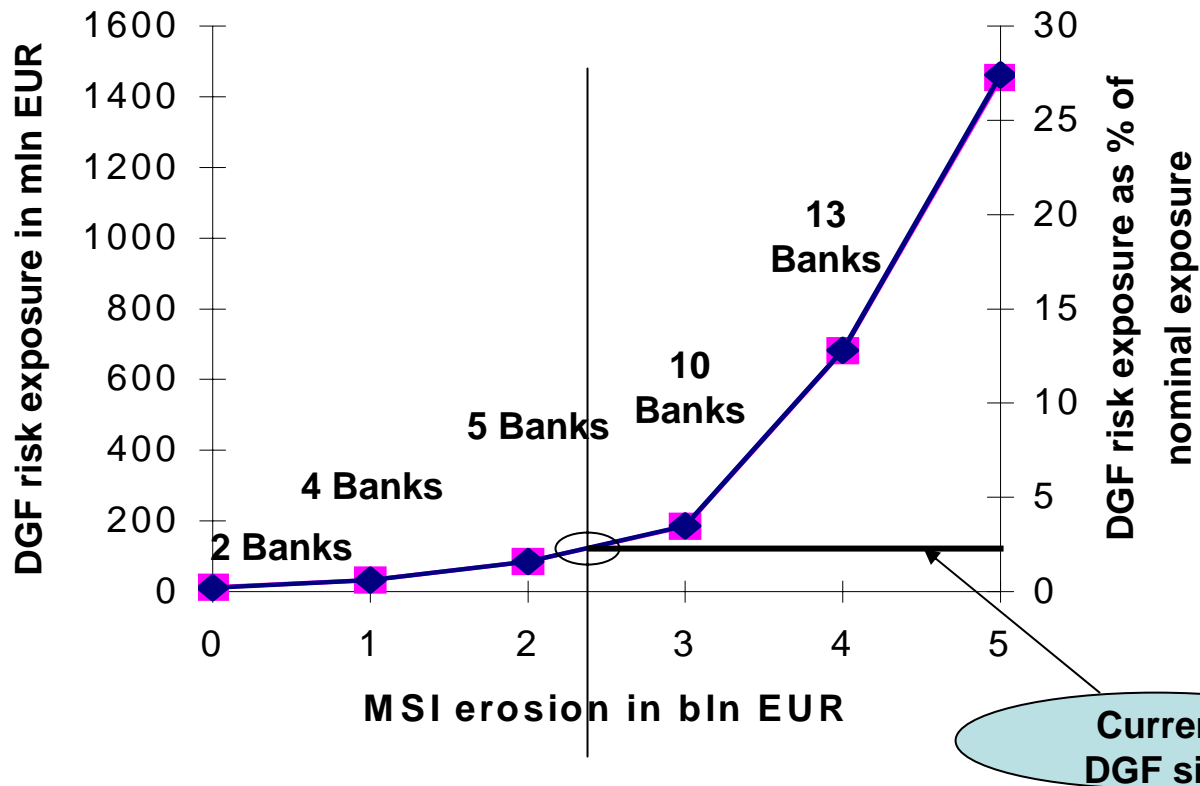
Bank Distribution

Classes	2003	2004
L1	12	10
L2	7	8
M1	10	6
M2	2	3
H1	0	2
H2	1	0

Higher Risk Banks

Bank Code	Risk class	Non performing Loans/ Assets (%)	MSI/Loans	Cumul. share in total insured deposits (%)	Cumul. insured deposits as % of DGF size
Bank A		21.4	3.2x	0.01	1
Bank B	"High Risk"	4.5	1.4x	0.31	17
Bank C	2003 - 2004	6.8	1.5x	0.81	45
Bank D		8.9	1.7x	0.85	47
Bank E	"Continuous	1.4	1.1x	5.15	285
Bank F	Medium Risk"	0.0	1.4x	5.25	290
Bank G	2003 - 2004	1.8	2.2x	5.31	293
Bank H	"Deteriorating	0.4	4.6x	5.57	310
Bank I	Medium Risk"	0.0	/	5.57	310
Bank J	2003 - 2004	0.0	/	5.70	317

Strong System-Wide Risk Absorption Capacity Even After Large Market Self-Insurance Erosion



Preliminary Conclusion

1. Today, DGF does not have a Risk Exposure to any bank /1
 - Market Self-Insurance (MSI) provides strong buffer
 - Aggregate: EUR 5 billion
2. In the event of strong MSI deterioration, DGF's Risk Exposure is less than Nominal Exposure
 - High Liquidity, partially protected by high reserve requirements
3. In the event of bank bankruptcy, DGF's Final Loss, in turn, is a fraction of Risk Exposure
 - DGF's priority claim on loan collections
4. This DGF "loss remoteness" has implications for both its target size and financial instruments.

1/ With the exception of two small banks. They represent 0.9% and 0.3% of total insured deposits and their NPL to total assets ratios are 2% and 0.7% respectively.

DGF Policy Focus Shift Possible?

“Pay-Out” Focus

- DGF able to absorb joint distress only in smallest banks (bottom 2%)
- Inability to handle 7+ large banks (85% of sector)
 - Constraining NBR intervention powers
 - Moral hazard
- Pre-emptive monitoring through close cooperation with NBR not a priority
- Weak incentive to pursue post-bankruptcy collection
- Strong incentive to maximize Fund’s size
 - To play “safe”



“Final Loss” Focus

- DGF able to absorb joint distress of a larger sub-set of the banking system
- Builds on strengthened NBR capabilities and new shareholder incentives
- Focus on speedy bankruptcy procedures
- Run to minimize net cost to banking system
- Requires careful assessment of financial structures
 - Allows use of early warning signals
- Makes banking system a co-monitoring party

What is DGF Supposed To Cover, and When?

- DGF must pay out insured deposits within 90 days of bank bankruptcy
- DGF can recover some funds later, during the bankruptcy process
 - Historical experience in Romania: up to 30%
 - Future?

- DGF has two liquidity needs:
 - A large one at beginning of bankruptcy
 - Of temporary nature, as collections flow back
 - Consolidating into a smaller one, of permanent nature, as bankruptcy collection draws to an end

DGF Possible Financial Structure

- Accumulated premiums (DGF Equity) could meet expected final losses and operating expenses
 - As final loss is a small fraction of DGF Nominal Exposure, actuarial precision is less important if DGF own resources, supplemented with debt financing, can cover multiple interventions in a range of banks
 - This presupposes prompt NBR intervention to pre-empt large bankruptcy losses
- Debt financing could cover immediate pay-out minus a % for the expected loss
 - It could be a liquidity backstop line from strongest banks

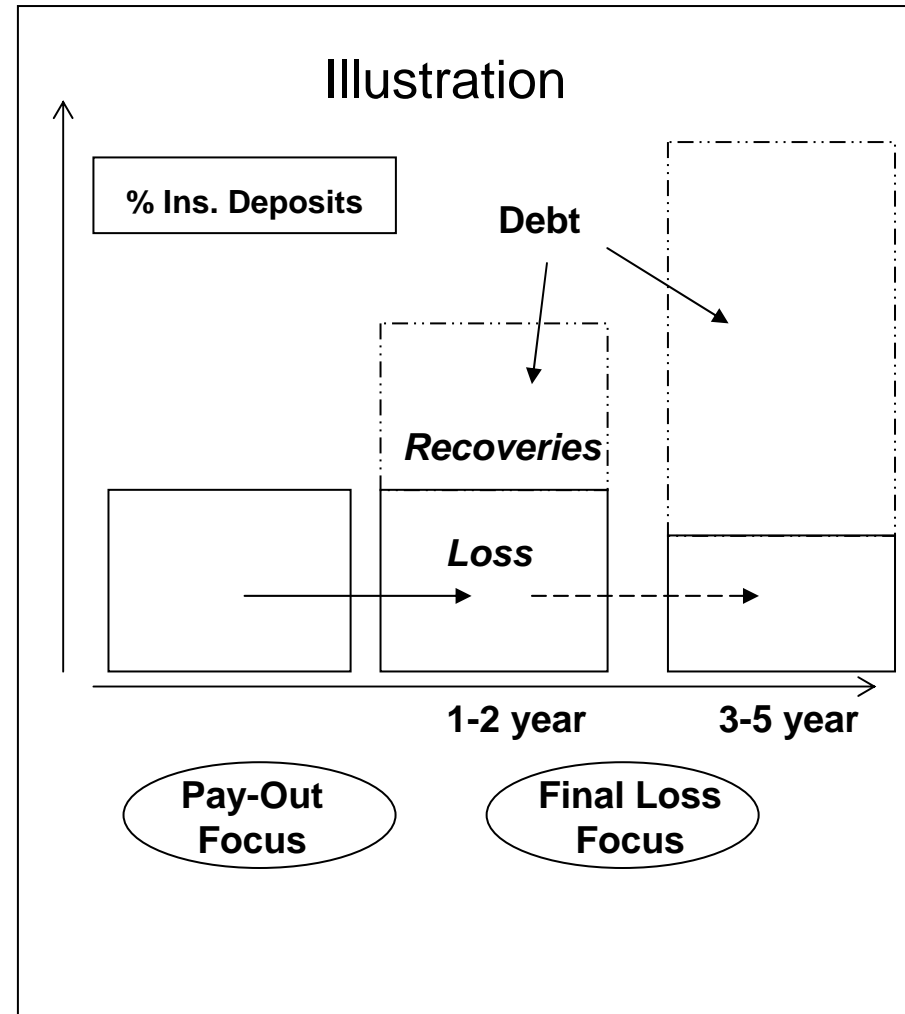
Implications for Annual Premium

- Short-term

- As liquidity back-stop line is raised from banks, premium could be calculated to keep DGF's size constant relative to insured deposits
 - To cover shortfall for deposit growth unmet by investment income
 - Actual level depends on deposit growth

- Long-term

- Under appropriate conditions in absence of defaults and foreseeable risks, premium could be calculated to allow DGF's relative size to shrink
 - Premium could even be suspended once aggregate liquidity back-stop lines exceed a certain level relative to insured deposits



Envisaged Next Steps

1. To receive DGF, NBR and RBA written feedback
 - Is the shift from “pay-out” focus desirable and possible, given market conditions and enforcement capabilities?
 - Could a liquidity back-stop line be raised from banks?
 - Do stakeholders support a (new) DGF financial policy?
 - Are DGF’s objectives, role and capabilities aligned with current needs?
2. To submit quantitative ranges to DGF stakeholders
 - How to build flexibility for annual premium setting
 - How to target pragmatic debt-equity ratio
 - Next discussion: three weeks after feedback
3. To summarize DGF stakeholders consensus
 - Final report to DIF Board: a month later.

Convergence DGF Team

- **Shkelqim Cani** (Country Senior Advisor, Convergence Program; former Governor of the National Bank of Albania, presently professor of Economics at the Tirana University)
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- **Luigi Passamonti** (CEO, Convergence Program, World Bank Senior Advisor; International Finance Corporation; The Boston Consulting Group; Basinvest Merchant Bank; J.P. Morgan)

APPENDIX

Our Assessment Depends on Following Assumptions

1. No major reversal in banks' financial condition can happen due to: (a) under-reporting of bad assets, (b) improper collateral valuation (that may have led to under-provisioning).
2. No major sudden reversal in banks' financial condition can happen due to: (a) failure in owners' scrutiny and/or (b) any other major failure in banks' corporate governance
3. Non-insured claims on banks, particularly international and shareholders' lending to banks, have contractual terms that cannot be radically altered under distress.
4. As credit continues to grow, banks' risk management and in particular credit screening abilities remain within recent historical performance
5. Banks are resilient to any macroeconomic shock related to high growth of domestic demand and associated widening of current account.

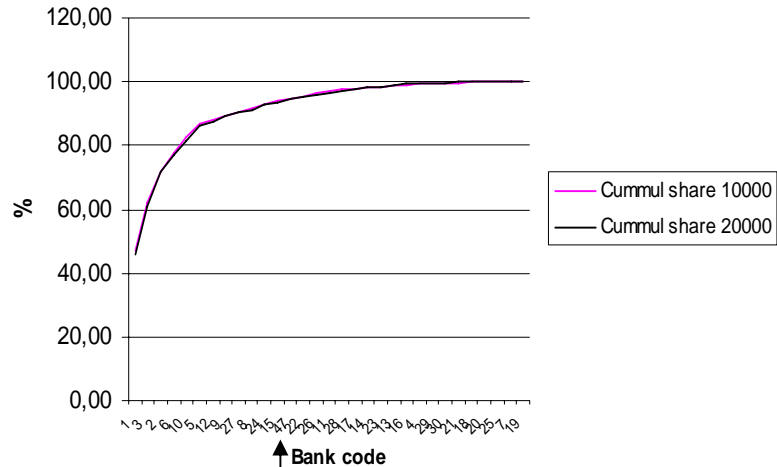
DGF Legislative Framework: The EU Deposit Insurance Directive

“[...] , given that the cost of financing such schemes must be borne, in principle, by credit institutions themselves and, on the other hand, that the financing capacity of such schemes must be in proportion to their liabilities, whereas this must not, however, jeopardize the stability of the banking system of the Member State concerned [...]” (EU Deposit Insurance Directive)

We estimate Romanian banks to pay over EUR 200 million in total contributions cumulatively 2006-2010.

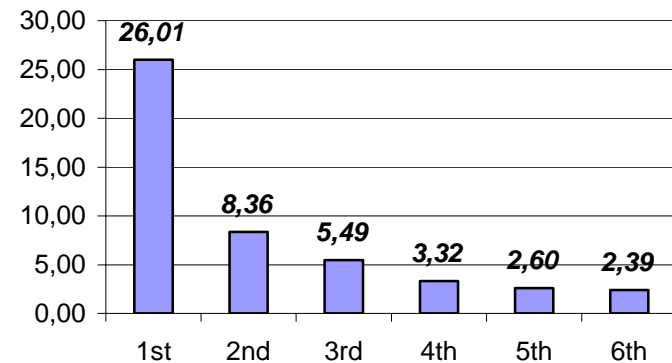
➤ Transfer of private resources in this magnitude to a public institution requires constant consideration.

Highly-Concentrated Deposit Market



Cumulative distribution of insured deposits per bank (descending size) shows extremely high concentration of deposits

Ratio of insured deposits in largest banks vs DIF's size



Assimetry of size generates assimetry of DGF's power: DGF could cover with ease insured deposits in several (small) banks, but would be cash-strained if called to intervene in medium and large banks. Recovery considerations are KEY to assessing adequacy of DGF size.

	Bank rank 1-6	Bank rank 7-15	Bank rank 16-3[5]
Range of insured deposits vs. DGF's size	26x – 2,4x	0,8x-0,4x	0,4x-0,0x

Two Important DGF Policy Issues

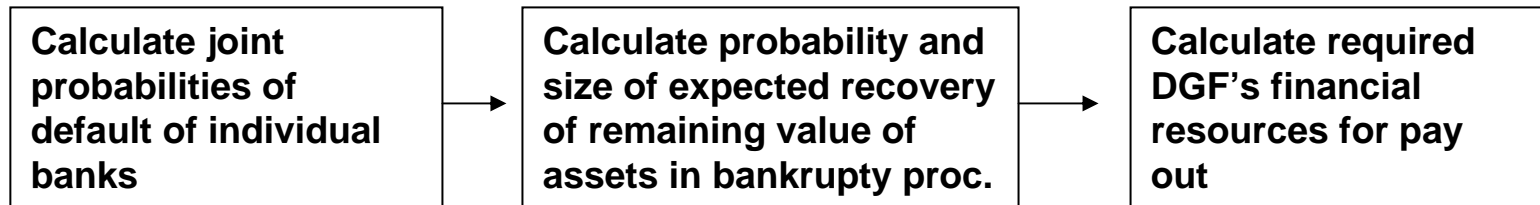
DGF Liquidity

- Rapidly growing to reach a projected EUR 250 m in 2007
 - DGF will be a large institutional investor
- Present investment policy allows bank deposits
 - Highly inappropriate

CEC Entry

- Will join DGF upon privatisation (2006)
 - Insured deposits: about EUR 1bn
 - “DGF Parity” pricing: EUR 30m
 - Actual pricing: EUR 5m
 - ECR Dilution: -0.25%
 - Fairness to existing members?

How To Calculate DGF size?



Alternatively, regulators can use Merton's version of the option pricing formula in order to determine optimum premium

Calculations above can't be done in Romania:

- there is a small number of distress episodes in modern Romanian history (6)
- structural changes in the banking sector create sharp discontinuity (future distress episodes can be sharply different from past ones)
- lack of data from banks' listed securities (dividend yields and ROE that are needed in the Merton's approach)

➤ We need a pragmatic approach that could be operationally dependable

DGF Financial Exposure

Basic Concepts and Definitions

- **Nominal exposure** – amount of insured deposits
- **Risk exposure** – a portion of nominal exposure that is not covered by riskless assets
- **Nominal exposure at default** – amount of insured deposits in a failed bank
- **Risk exposure at default** – a portion of nominal exposure that is not covered by riskless assets in a failed bank
- **DGF's loss (given default)** – a portion of risk exposure at default that was not recovered in the bankruptcy process
- **Exposure Coverage Ratio (ECR)** – ratio of DGF's funds to nominal exposure (total insured deposits)

DGF Cash-Flow Statement

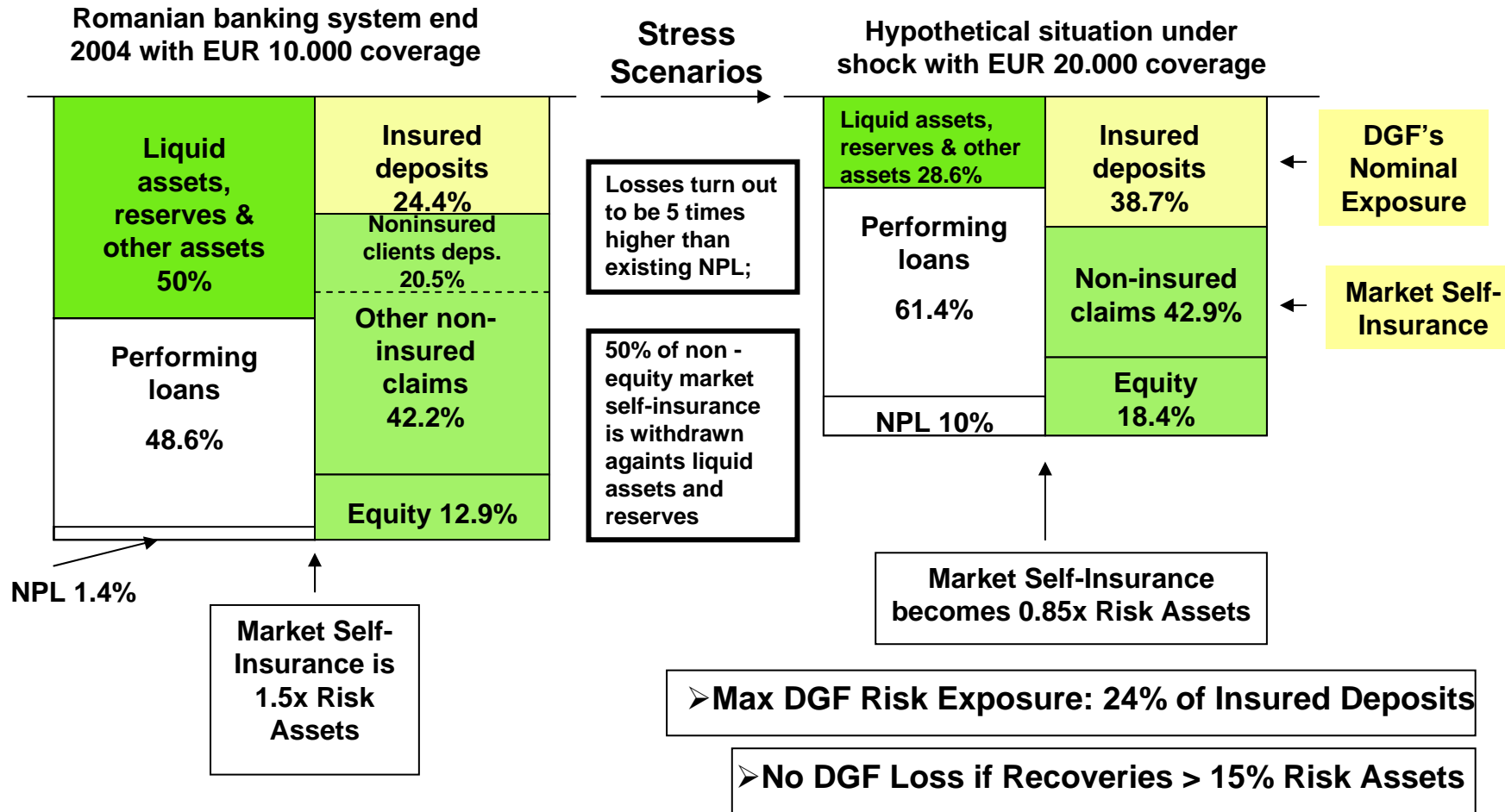
← ACTUAL → ← PROJECTIONS →

Items	2003	2004	2005	2006	2007
Coverage, in Eur	3.000	10.000	10.000	15.000	20.000
Resources, EUR million					
Transferred from previous year at the beginning	55	72	96	139	199
Premium (%)	0	0	0	0	0
Banks annual premium for the year, calculated on the guaranteed deposits as of previous year	29	33	39	46	43
Profit from investment	12	15	13	14	17
Expected recovery of claims from bankrupted banks (30%)	4	4	2	0	0
Total resources	101	124	150	200	259
	0	0	0	0	0
Payments	0	0	0	0	0
Repayment of loan	28	27	9	0	0
Operational costs and expenditures	1	1	1	1	1
Compensation of depositors	0	0	1	0	0
Total outflow	29	28	11	1	1
Year end balance	72	96	139	199	258
Total guaranteed deposits at the end of the year◇	4.595	7.896	11.591	14.489	17.387
Total insured deposits at the end of the year	2.485	4.863	7.703	10.122	12.147
Year end balance/total guaranteed deposits, %	1,56	1,22	1,20	1,37	1,48
EXPOSURE COVERAGE RATIO (Year end balance/total insured deposits), %	2,88	1,98	1,81	1,97	2,12

Note: 2004 data under assumption that coverage was 10.000 (actual was 6.000 on the 31st of Dec)

Assumptions: deposits grow at 30%, 25% and 20% in 2005 – 2007; deposit interest rate comes down from 8.5% to 6.5% and government securities yield from 17% to 9% in the same period.

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



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

Final Loss: Fraction of Nominal Exposure

Illustration Bank A

Bank A is one of the closest to create a potential material Risk Exposure to DGF

A Bank data:

Share in total insured deposits = 1.1%

Insured Deposits/DGF

Liquidity:0.6x

NPL / Total assets = 5.3%

Equity / Total assets = 11.6%

Non-Insured liabilities / Total assets = 37%

Market Self-Insurance / Risk Assets = 1x

Loans / Assets = 49.1%

Assumptions:

NPL (losses) increase five times

Four fifths of non-insured liabilities withdrawn before bankruptcy

Simulated Balance Sheet

LA, R & Perform. Loans 55.0%	Insured deposits 65.1%
Losses 45.0%	NIL 15.9%
	Equity 19.0%

DGF's Loss represents only 15.5% of the total deposit payout (nominal exposure). This is equal to 10% of DGF's present size.

This simulation suggests DGF could absorb simultaneous "weak" bank distress of about 10% of total insured deposit base

NBR Key To Making DGF Exposure Manageable Even With Large Banks

Illustration BCR

Share in total insured depos > 40%
Insured Deposits/ DGF Size: 26x
 NPL/Assets = 1.4%
 Equity / Assets = 13.1%
 Other non.ins.liab./assets= 45.9%
 MSI / Assets = 59%
 Loans / Assets = 44.5%
MSI / Loans = 1.33x

DGF Risk Exposure

What would the minimum EUR m MSI swing be to create a DGF Risk Exposure?



EUR 773 m

DGF Risk Exposure At Default

Assuming a EUR 1.4 bln (50%) non-equity MSI swing, how much NPL growth is required to create a DIF Risk Exposure?



81% of Loans are Loss

DGF Loss

Under scenario B, what would the maximum collection rate on Risk Assets be to create a DIF Loss, assuming insolvency = 5 and 10% of Equity ?



Relevant?

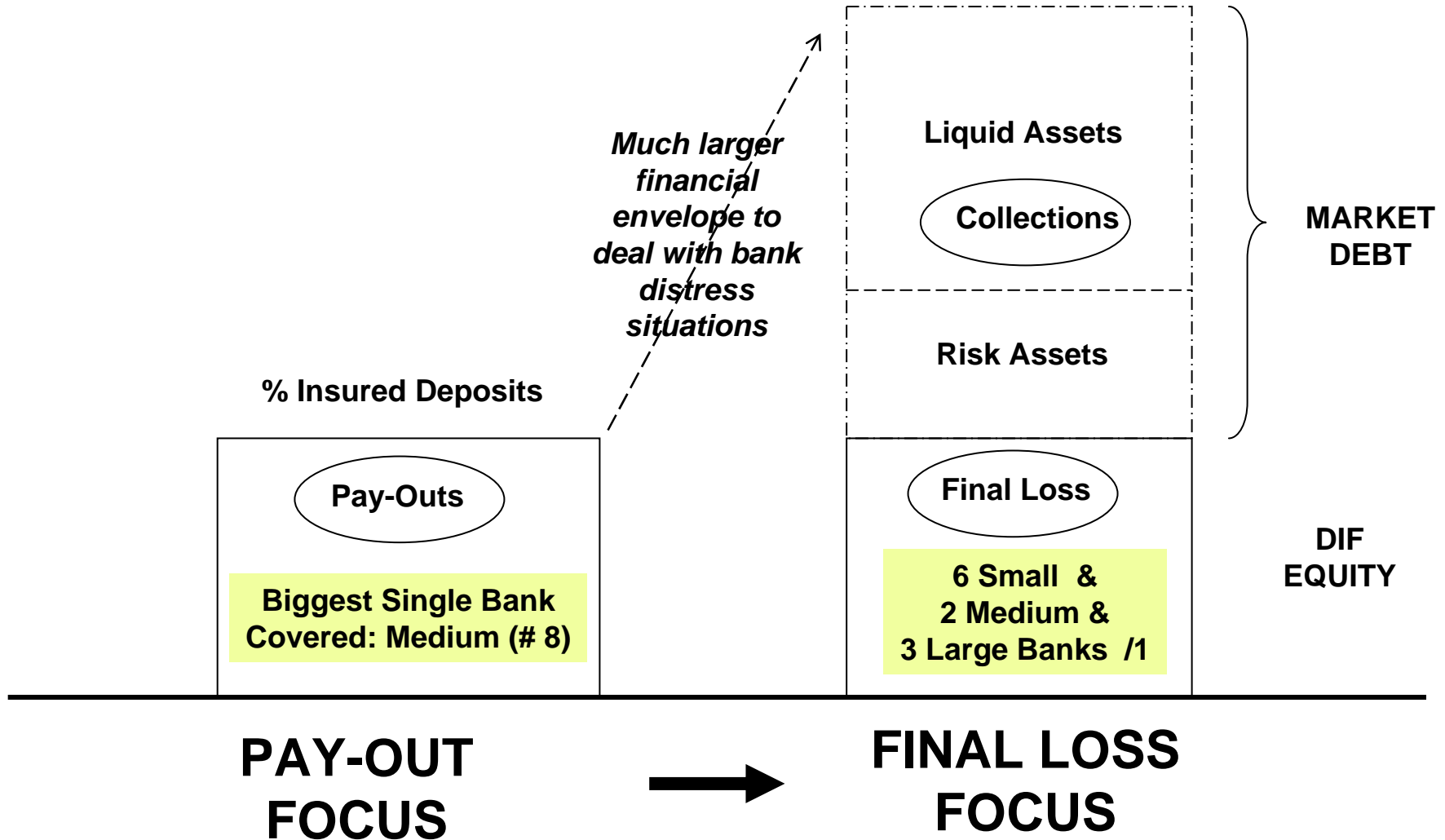
DGF "Large" Loss

Under scenario C, assuming insolvency 5% of equity, what would the maximum collection rate on Risk Assets be to create a DIF Loss = 50% of DIF Liquidity?



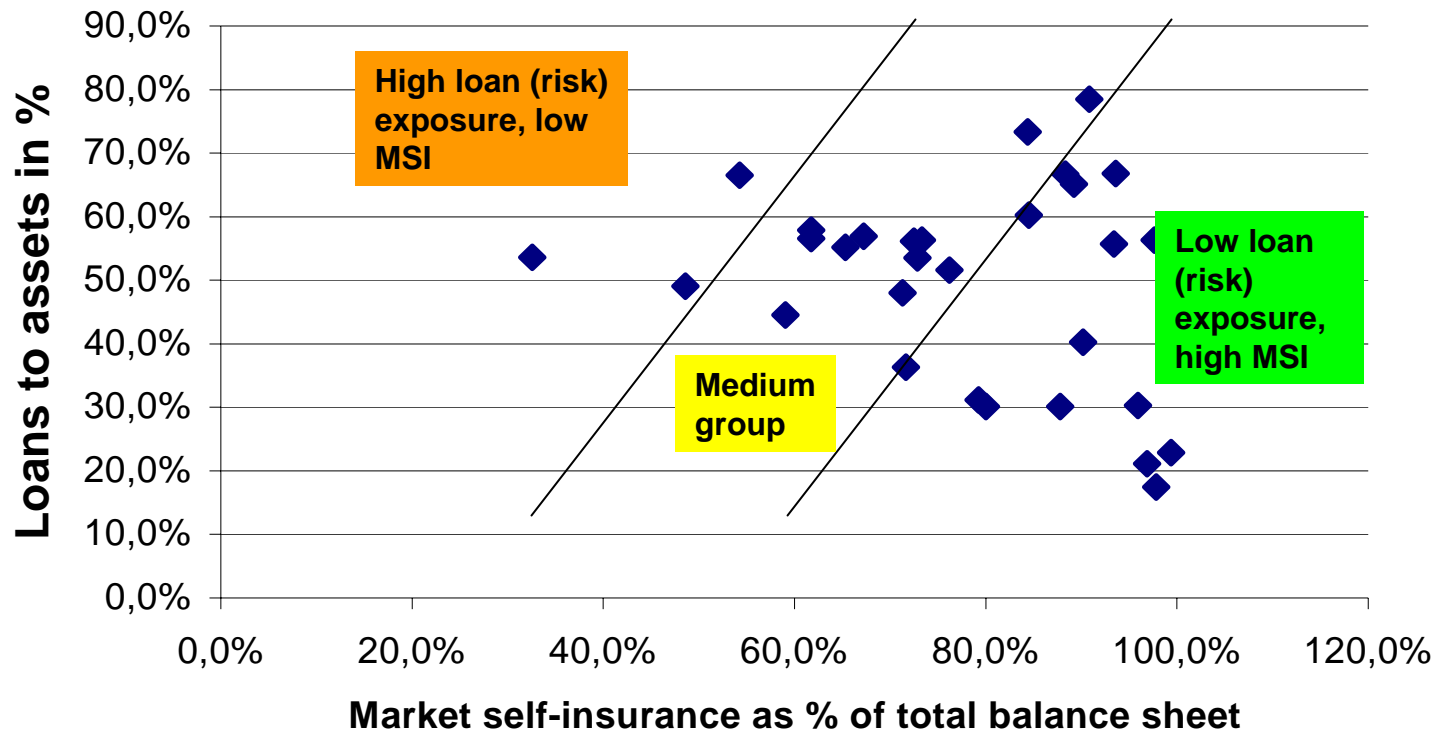
Relevant?

Policy Shift Implications For DGF Size Illustration

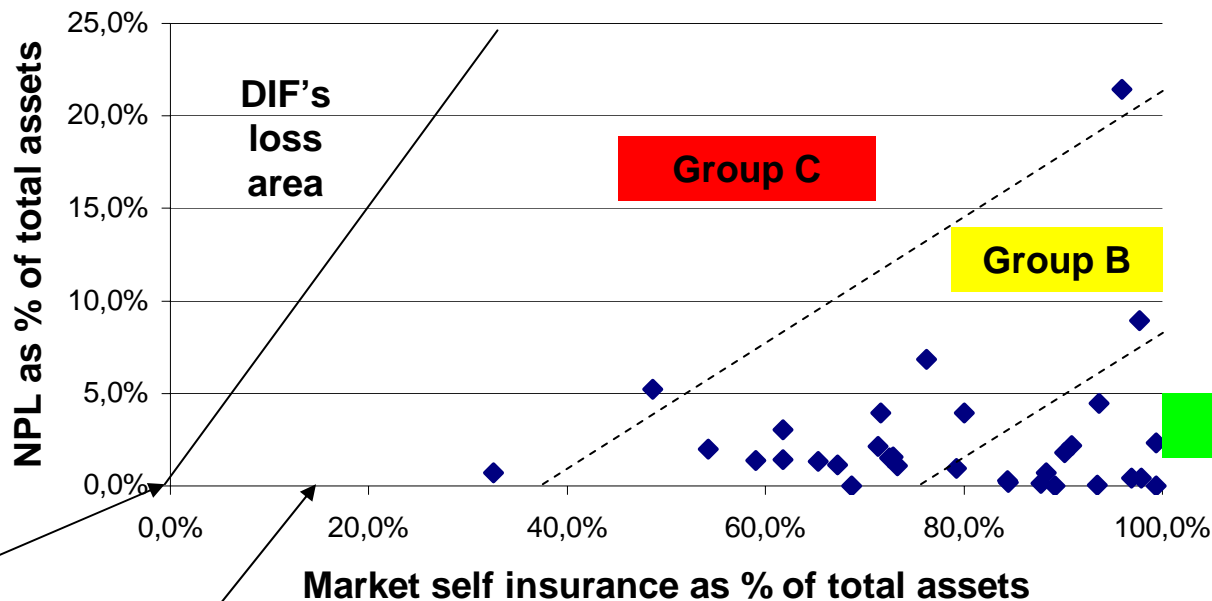


/1 Assuming Low Severity Bank Failures Owing To Prompt NBR Interventions

Banks' positioning according to market self-insurance vs. loans to assets



Banks' positioning according to market self-insurance vs. bad assets



DIF loses own funds to the left of this critical line because losses are higher than market self-insurance

Market self-insurance absorbs banks' losses to the right of the critical line. Risks to DIF are judged according to distance of individual banks to the DIF's loss line

	Group A	Group B	Group C
Market self-insurance as % of assets*	92.0%	70.8%	59.0%
NPL as % of assets*	1.0%	3.0%	9.1%
Market share	5.2%	93.3%	1.5%

* Unweighted average

No Obvious Sub-Group Vulnerability

Banks ranked according to size

	Bank rank 1-6	Bank rank 7-15	Bank rank 16 – 3[5]
Market self-insurance over loans ratio	1.1x – 1.5x	0.8x – 2.0x	0.6x – 5.6x
Range of NPL over total assets	1.1 - 2.1%	0.1 - 5.3%	0.0 - 21.4%

There is only one bank in the second group with market self insurance lower than total loans (80%) and one bank in the third group (60%).

Market self-insurance of individual banks provides a safety cushion against DIF's losses today.

Building blocks of a flexible and robust deposit insurance system

- Enabling DGF to play the role in line with improved Romanian banking system structure, related to improving collection / workout processes and building confidence for depositors and creditors (diminishing volatility of market self-insurance and increasing efficiency of workout / collection processes).
- Enabling DGF to play the role in line with improved Romanian banking system structure, related to improved financial policy and financial planning.
- Improving financial operations and risk monitoring capabilities in close cooperation with National Bank of Romania Supervision Department.
- In the first phase of DGF's advancement, beginning of systematic introduction of market borrowing into the spectrum of instruments for DGF's financing (conditional credit line).
- More flexible and more frequent premium setting based on upgraded abilities to make reliable financial projections and risk analysis in cooperation with NBR Supervision.

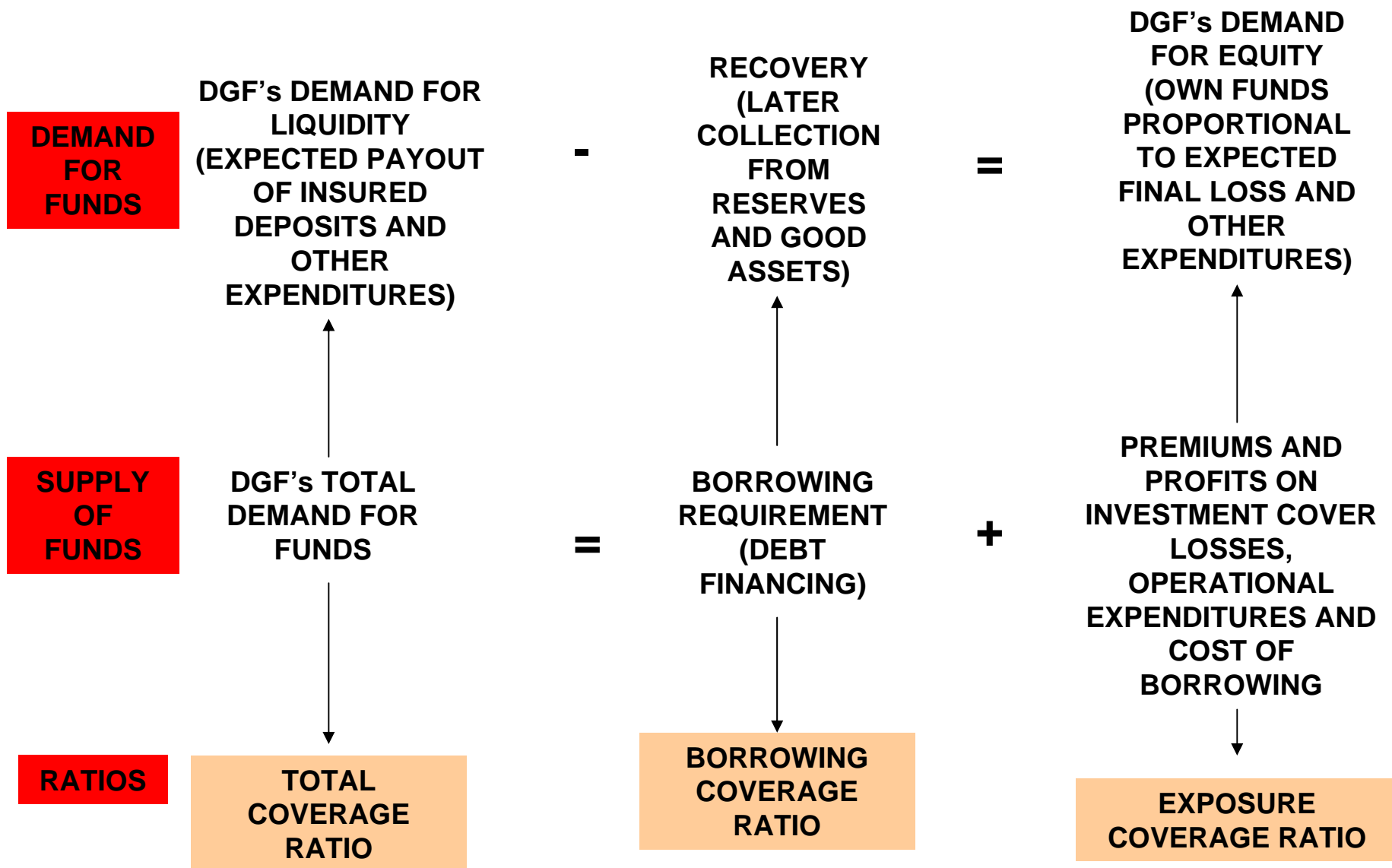
DGF's financial policy principles

- As any other financial institution, DGF has cash outlays which do not necessarily imply losses.
- DGF should combine own funds (premiums, retained profits, collections from recoveries) with borrowing in order to meet its obligations.
- This is the same as saying that it should combine equity and debt financing.
- Equity (own funds) should be used to cover losses.
- Borrowing should be used to finance temporary needs for funds.

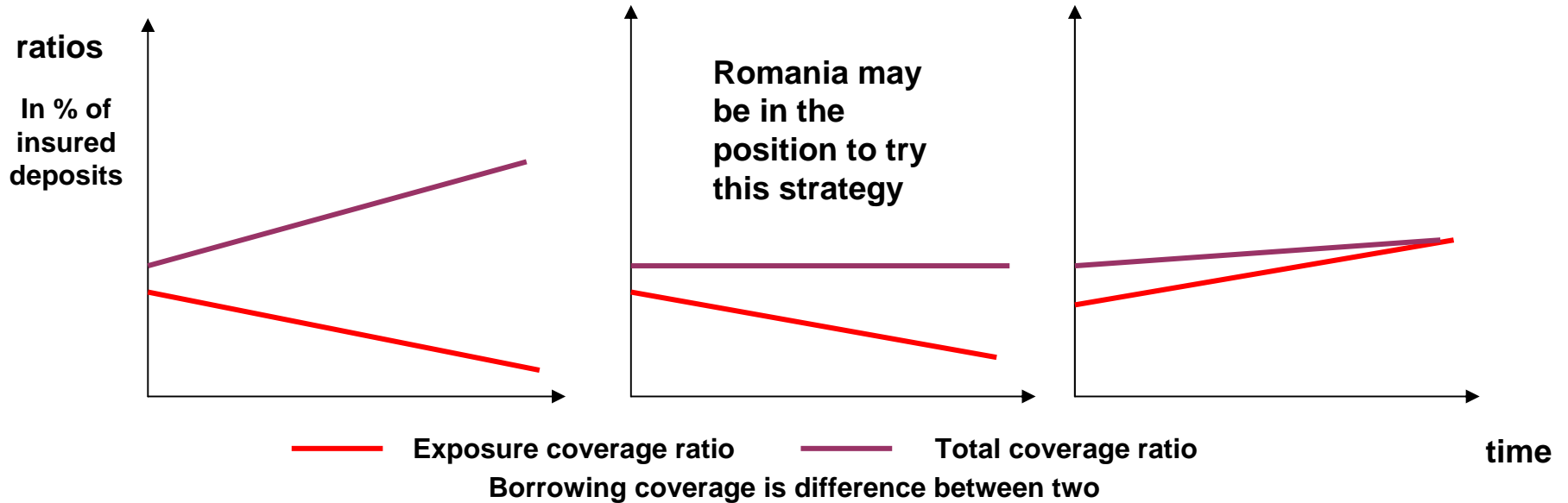
What should exposure coverage ratio cover?

- **Exposure coverage ratio measures DGF's capital adequacy** (protection against losses): it should cover DGF's expected losses i.e. counter-value of insured deposits that cannot be recovered in the bankruptcy process
- **DGF's liquidity demand** = pay out of insured deposits in failed banks
- **DGF's equity demand** = own funds needed to cover DIF's losses
- **DGF's loss** = deposit payout – collections (later recoveries)
- **Collections** come from: (a) liquid assets and reserves, (b) performing assets, (c) non-performing assets (in lower proportion)
- Exposure coverage ratio should not cover DGF's liquidity demand

Implications for DGF's financial policy and links with exposure coverage ratio



Types of evolution of DGF's ratios



Probabilities of insolvency (default) increase, but as market self-insurance grows, other creditors bear larger portion of losses, lower DGF's losses are expected, so higher payout of insured deposits can be financed by borrowing.

Probabilities of default do not change, but market self-insurance grows, other creditors can bear larger portion of losses, lower DGF's losses are expected, so larger portion of payout of insured deposits can be financed by borrowing.

Probabilities of default increase, other creditors collect their claims (market self-insurance deteriorates), higher portion of payout will represent a loss for DGF.

How can DGF be sure that it can borrow?

- Banks have a motive to lend to DGF. As long as they lend, there is no need for raising ex post supplementary premium if DIF spends most of its own funds.
- If banks perceive lending as an ex ante substitute for ex post supplementary premium, they may lend even when they expect that part of claim on DIF will not be recovered (instead of one-off ex post supplementary premium they can gradually build provisions against claim on DIF)
- Higher rate of reserve requirement implies higher ratio of liquid assets and reserves to insured deposits i.e. higher expected recovery of DIF's assets and lower risk of banks' lending to DIF. Hence banks will be willing to lend in such environment

How to make it operational?

- Initiate DGF's developments in terms of (a) application of new financial policy principles, (b) improved risk monitoring in coordination with NBR supervision, (c) improved financial planning capacity, (d) improved monitoring and execution of recovery/collection processes.
- Initiate joint work with banks aimed at reaching common understanding of how system works and based on that reach agreement on banks' conditional credit line in an initial amount of 30-40 million EUR
- Conditional to these developments, make premium flexible downwards (requires legal changes) and start with gradual decrease of premium (to 0.2% in the first step) depending on the size of conditional credit line
- After 2 years, depending on DGF's progress and state of the banking system, consider increase of conditional credit line and further decrease in premium. Introduce annual reviews that will serve to determine optimum premium and size of conditional credit line.

Questions for Finalisation of Report

1. Is the excess of non-insured liabilities over risk assets a structural feature of the Romanian banking system? How durable this could be?
2. What could be the sources of volatility of market self-insurance in Romania?
3. May incentives change for banks to continue to raise non-insured liabilities?
4. How likely is it that DGF could successfully pursue active policies that would lead to more efficient collection of assets from failed banks and the design of a new financial policy?
5. Is proposed approach for a more active DGF's role of interest for Romanian authorities?
6. Are you otherwise comfortable with our inability to positively conclude about the current funding adequacy of DGF in the absence of conditional credit line?