

**48th Annual Conference on Bank Structure and Competition  
Federal Reserve Bank of Chicago**

***Panel on Bank Stress Testing***

**Stress Testing in a Crisis – the European Experience**

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Disclaimer: The views expressed in this presentation are those of the presenter and do not necessarily reflect those of the ECB.

## **I. Overview: stress testing in Europe**

- a. A recent history of stress testing in the EU
- b. Stress testing objectives

## **II. Challenges facing European stress testers**

- a. Stress test governance issues in the EU
- b. Stress testing during crises

## **III. Objectives achieved?**

## **IV. Conclusions**

## I.a. Overview: A recent history of stress testing in the EU

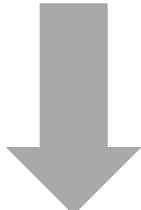
- **Three EU-wide macro stress tests have been conducted in recent years**
- **The first two (in 2009 and 2010) were conducted under the aegis of the Committee of European Banking Supervisors (CEBS)**
  - **Hurdle rate: 6% Tier I ratio**
  - **Adverse scenario: 5% probability of occurrence**
- **The third stress test in 2011 was conducted by the European Banking Authority (EBA) – the successor of CEBS**
  - **Hurdle rate: 5% Core Tier I ratio**
  - **Adverse scenario: 2.5% probability of occurrence**
- **The 2010/2011 exercises were stress tests with mandatory capital implications for the banks failing the test**

## I.a. Overview: A recent history of stress testing in the EU (cont'd)

- **The 2009/2010 stress tests were not deemed a success** as market sentiment was not improved
- **The 2011 stress test was more successful** as it **induced banks to frontload a substantial amount of capital raising** (>€50 bill. in H1 2011)
- **Publication of results coincided with intensification of euro area sovereign debt crisis** which unveiled new systemic risks not considered in the stress test
- Greek PSI judged not likely in Spring 2011
- Intensification of tensions led to EBA recap exercise in Autumn 2011 requiring banks to build up additional capital buffers (€115 bill.):
  - Hurdle rate: 9% Core Tier I
  - “Sovereign buffer” based on MTM of all sovereign holdings

# I.b. Overview: stress testing objectives

*viewed as part of broader macroprudential policy objectives*

Policy domain	Objective	Systemic risk seen as	
Microprudential supervision and regulation	<b>Ensure soundness of individual financial institutions</b>	<b>exogenous</b>	
Macroprudential oversight and policy	<b>Limit systemic risk</b> 	<b>Increase in resilience</b>	<b>endogenous</b>
		<b>Manage the credit cycle</b>	<b>endogenous</b>

**Ensure stable provision of financial intermediation services to the economy**

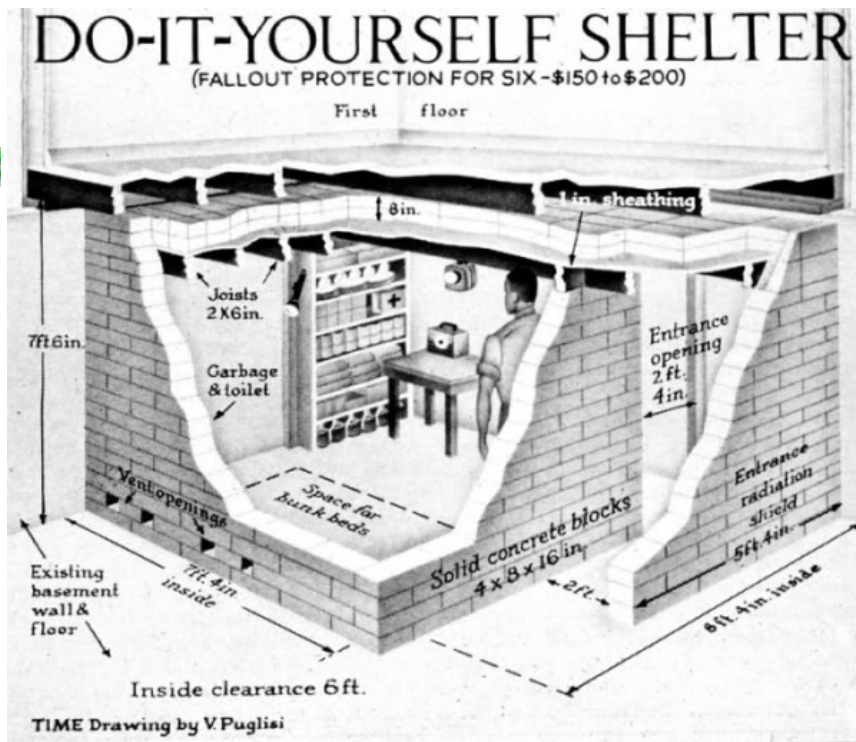
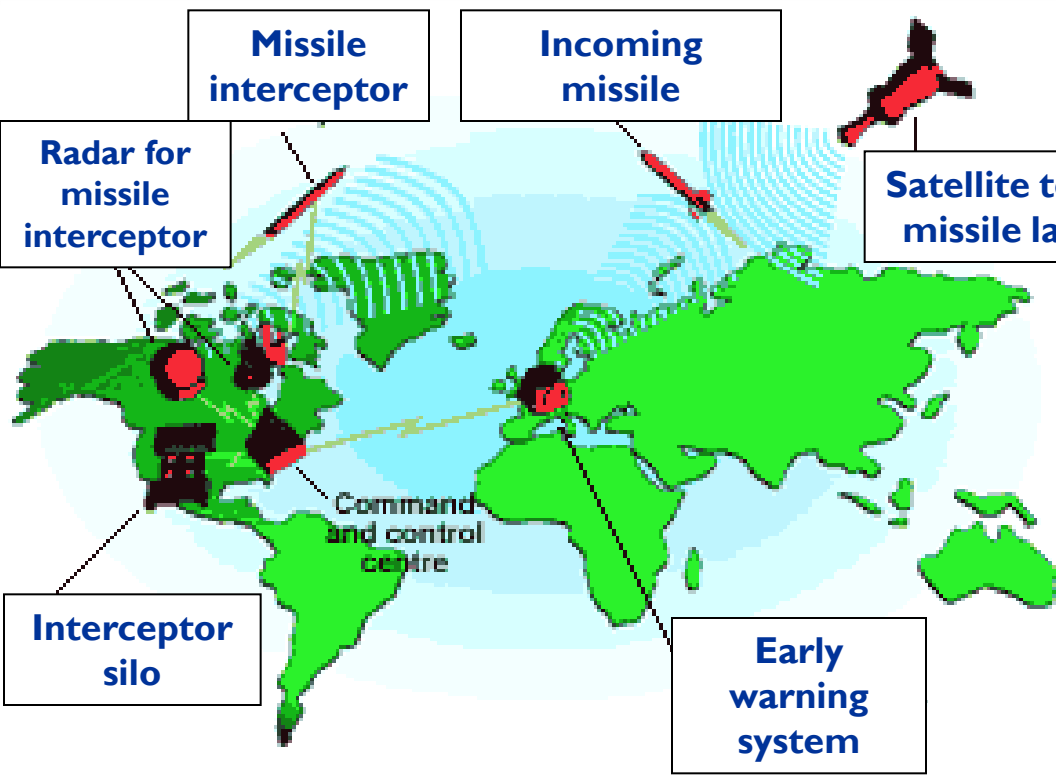
## I.b. Overview: stress-testing objectives

### *EU macro stress test objectives*

- **Primary objective of stress-tests is to assess resilience of the financial system**
- **As a crisis prevention tool:**
  - **Micro-prudential perspective:** “Identify trends, potential risks and vulnerabilities stemming from the micro-prudential level and ensure appropriate action is taken against them” (EBA)
  - **Macro-prudential perspective:** Gauge the resilience of the financial system to plausible but severe macro-financial stress scenarios and ensure a sufficient level of capital in the banking system
  - *But how much capital is enough?*

# I.b. Overview: stress-testing objectives

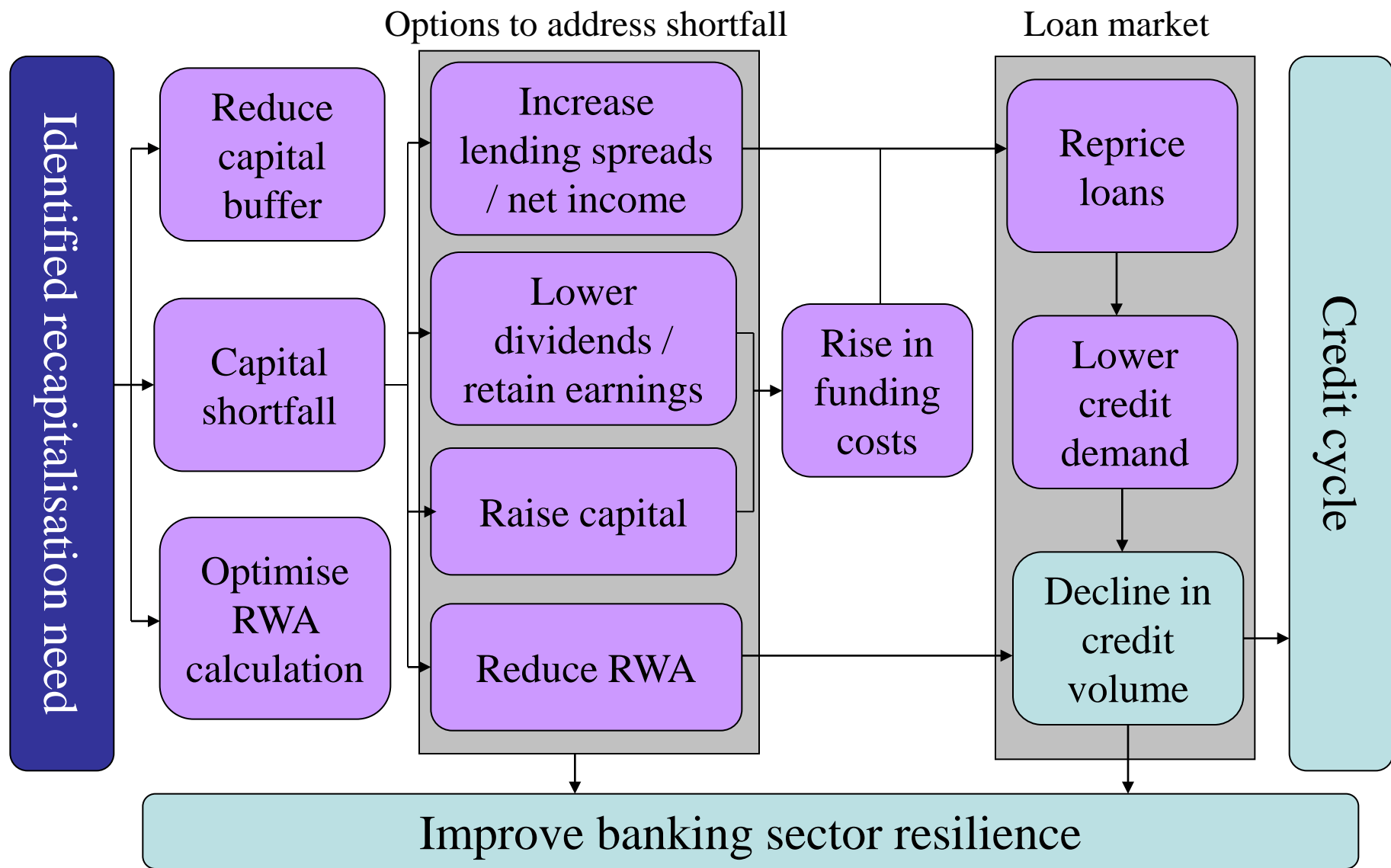
*Managing the credit cycle, increasing resilience or both?*





# I. b. Overview: stress-testing objectives

Available transmission channels pre-crisis (crisis prevention)





## II.a. Challenges: Stress test governance issues in the EU

### *Managing macro constraints and micro incentive challenges*

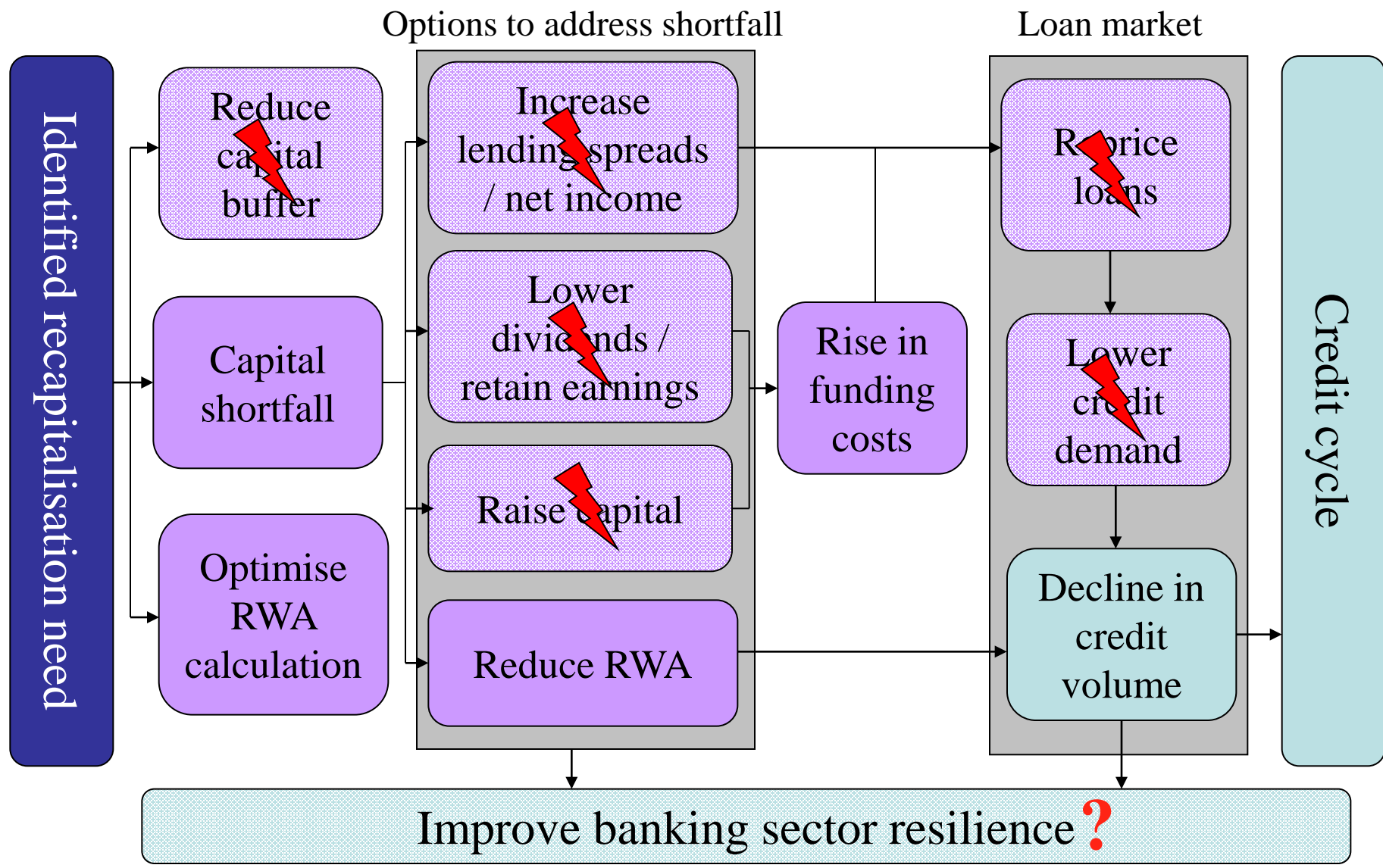
- **Cross-country coordination a key challenge in Europe**
- **EBA has coordinating role (also involving ECB/ESRB/EC)**
  - **Adverse selection risk:** banks/countries that are in a “beauty contest” for capital in the same market try to avoid severe scenarios and stress test results (“hiding the lemons”)
  - To address such concerns, and improve quality, the 2011 exercise incorporated extensive “**peer review**” among supervisors and a “**top-down**” stress test (carried out by the ECB)
- **Fiscal responsibility remains at the national level**
  - **Heterogeneity in credibility of sovereign backstops:** incentive for countries with weakened sovereigns to push for less severe scenarios

## II.b. Challenges: Stress testing during crises

- **Primary objective of stress-testing during a crisis is also to test resilience to severe but plausible shocks**
- **As a crisis management tool:**
- Gauge the resilience of the financial system and ensure a sufficient level of capital in the system
  - But how much capital is enough?
  - **Are sufficient backstops available?**
- **A communication device to restore market confidence by increasing transparency about the health and risk profile of banking sector**
  - **Publication of stress test results and individual bank data in order to reassure market participants through increased transparency**
  - **Reduce adverse selection premia in bank funding costs**

# II.b. Challenges: Stress testing during crises

Available transmission channels during a crisis (crisis management)



## II.b. Challenges: Stress testing during crises

### *Unique challenges faced in euro area*

- 2nd stage (sovereign debt) of the crisis a result of the 1st stage (sub-prime)
- High costs of recapitalisation during 1st phase of the crisis fell back on certain sovereigns (e.g. IE, ES) – “adverse feedback loop”
- **Risks of unintended consequences in the balancing of plausibility and severity:**
  - Potential adverse impact on some sovereigns in case of large capital shortfalls
  - Risk of deleveraging and credit contraction feeding a pernicious triangle of adverse feedback between weak growth, fragile banks and stressed sovereigns

### III. Objectives achieved?

*How to gauge the success or failure of a stress-test in a crisis?*

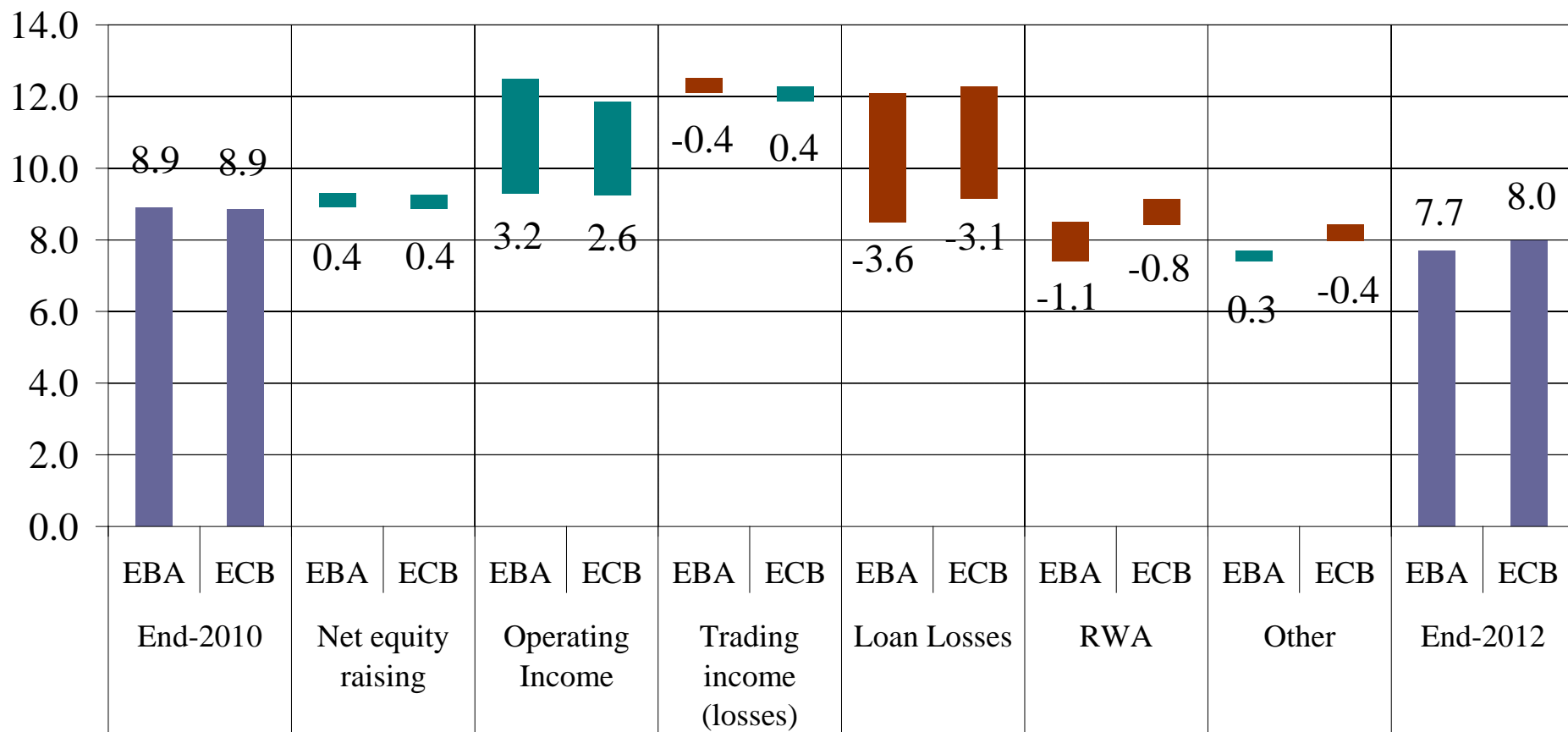
- **Revelation of a capital shortfall?**
- **At least five desirable impacts**
  - Convincing evidence of resilience (including addressing Governance issues)
  - If resilience is absent, triggering of measures to enhance resilience
  - Avoiding excessive deleveraging
  - Greater differentiation in the pricing of securities of participating banks (addressing adverse selection premia by revealing “lemons”)
  - Lowering of systemic risk



# III. Objectives achieved? Evidence of resilience

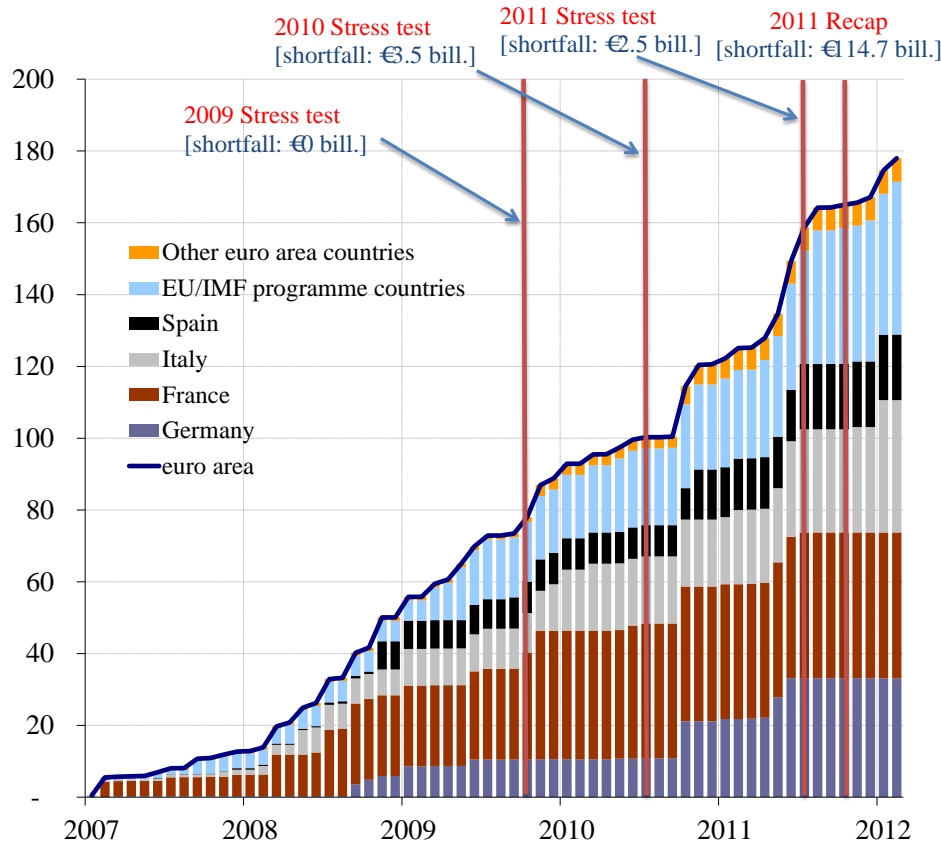
*Credible challenge of bottom-up results with a top-down stress test*

## Cumulative contribution of different risk drivers to the evolution of aggregate Core Tier I capital under the adverse scenario from end-2010 to end-2012



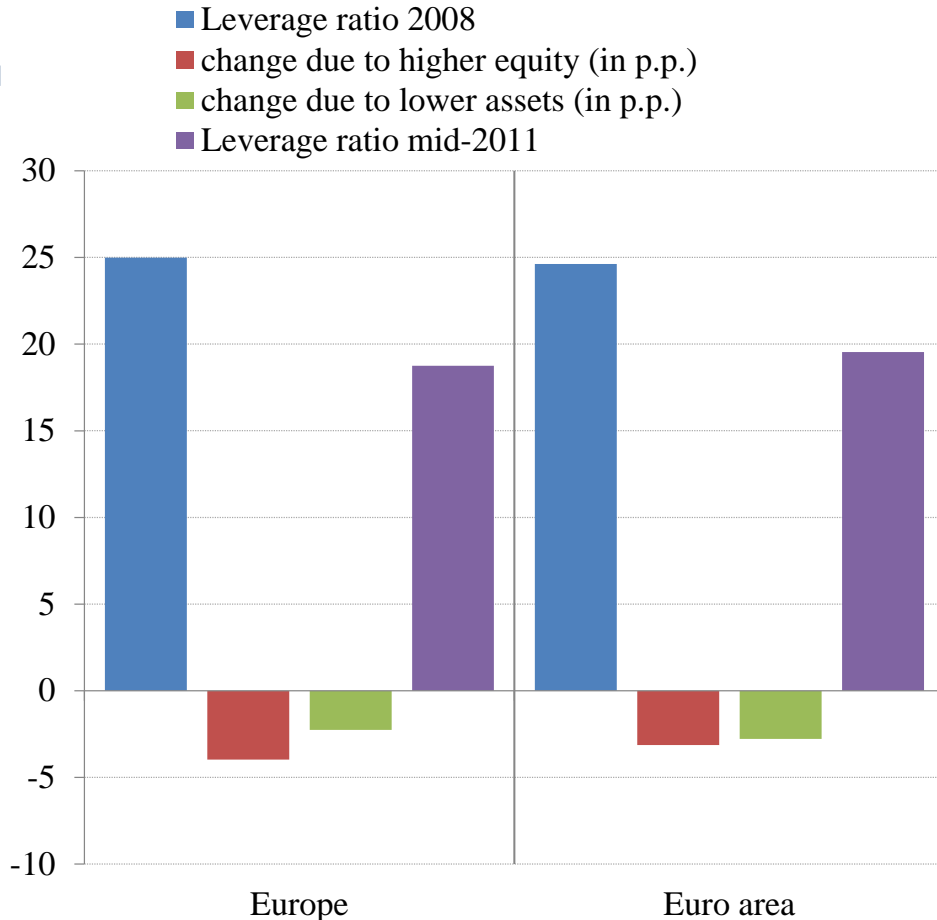
# III. Objectives achieved? Large amounts of new capital have been raised since the stress-tests and disorderly deleveraging has been avoided

## Equity issuance by euro area banks (in € billion)



Source: ECB.  
 Note. In addition, government capital injections into euro area banks amounted to around €185 bill. since 2008.

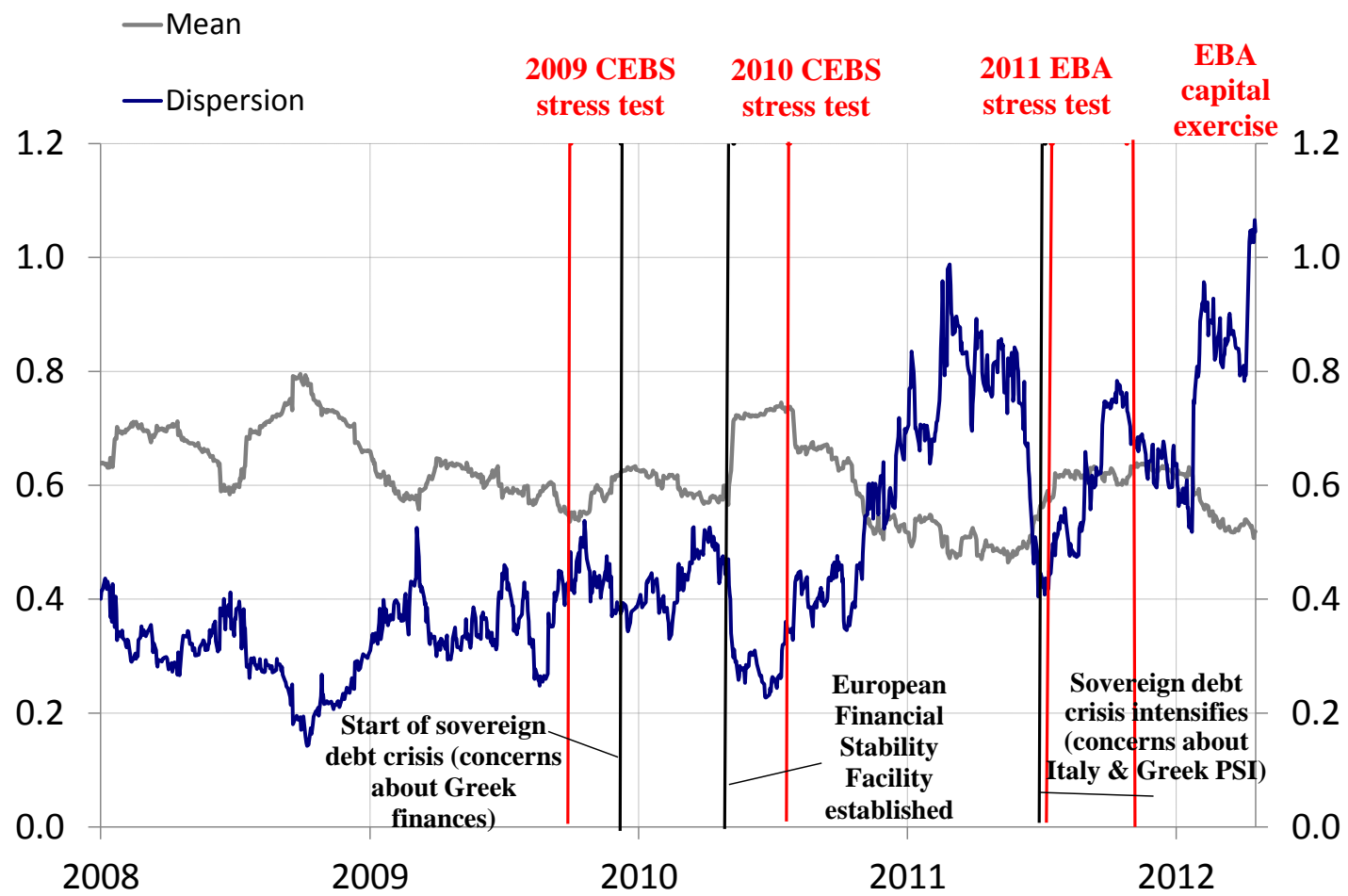
## Change of leverage ratio of EU and euro area banking sectors



Source: ECB and ECB calculations.

# III. Objectives achieved? Impact on adverse selection

## Greater differentiation in the pricing of risk



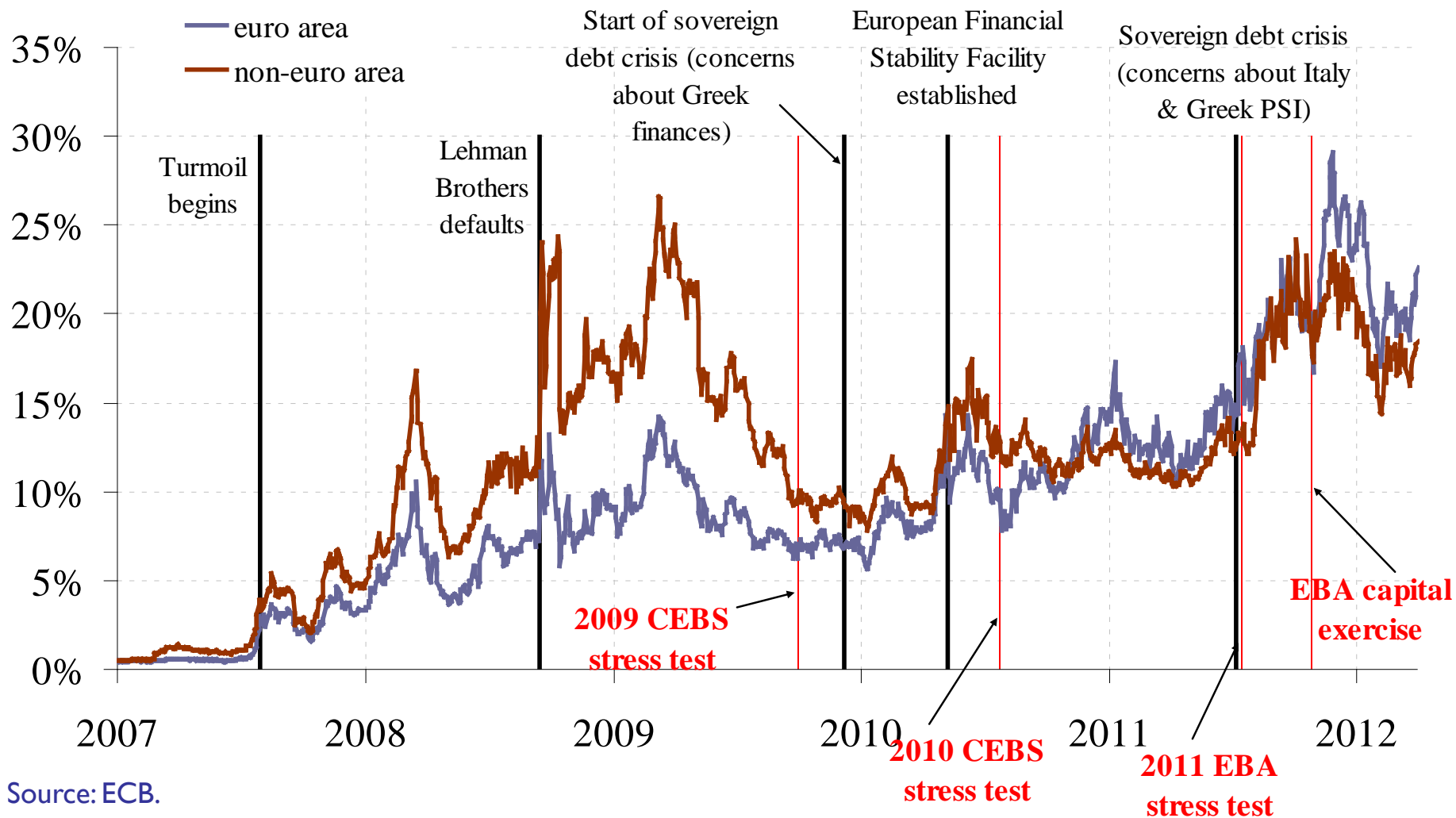
Source: Bloomberg and ECB calculations.

Note: 60-day rolling correlations of stock prices of 55 EU banks included in the EBA stress test sample against the EuroStoxx 600 index. "Dispersion" is measured as the interquartile range over the median correlation.



# III. Objectives achieved? Impact on systemic risk

*Only transient impact on systemic risk due to sovereign debt crisis*



Source: ECB.

Note: Probability of two or more banks defaulting simultaneously within next 2 years.

## IV. Conclusions

- **Regardless of the context, primary objective of stress-tests is to assess resilience of the financial system**
- **The context – pre-crisis or in-crisis – matters:**
  - Stress-tests can serve as crisis prevention or crisis management tools
  - Transmission mechanisms are context dependant
- **Although moral hazard should be avoided, a credible sovereign backstop may be needed in a crisis to:**
  - Ensure resilience and confidence
  - Avoid excessive deleveraging
- **If a stress-test is to address adverse selection problems, high transparency is needed**
- **There are limits in the degree to which stress-tests can mitigate systemic risk**

# Thank you!

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