

Resolution and Deposit Insurance in
A Modern Framework for
Macro-Prudential Risk Management

Thomas Philippon

NYU, NBER, CEPR

Outline

- Framework for crisis resolution and stress testing
 - Surprising results on moral hazard
 - Strong links with micro-prudential tools, PCAs, and resolution
- Challenges
 1. Speed & Segmentation
 2. Market Power & Market Discipline

Analytical Framework

Risk Management vs Ex-Post Interventions

t=0

t=1

Risk Taking / Shifting

- Micro: hidden leverage
- Macro risk: shadow banking

Regulations

- Solvency, liquidity
- Stress testing
- Resolution plans / living wills

1-p

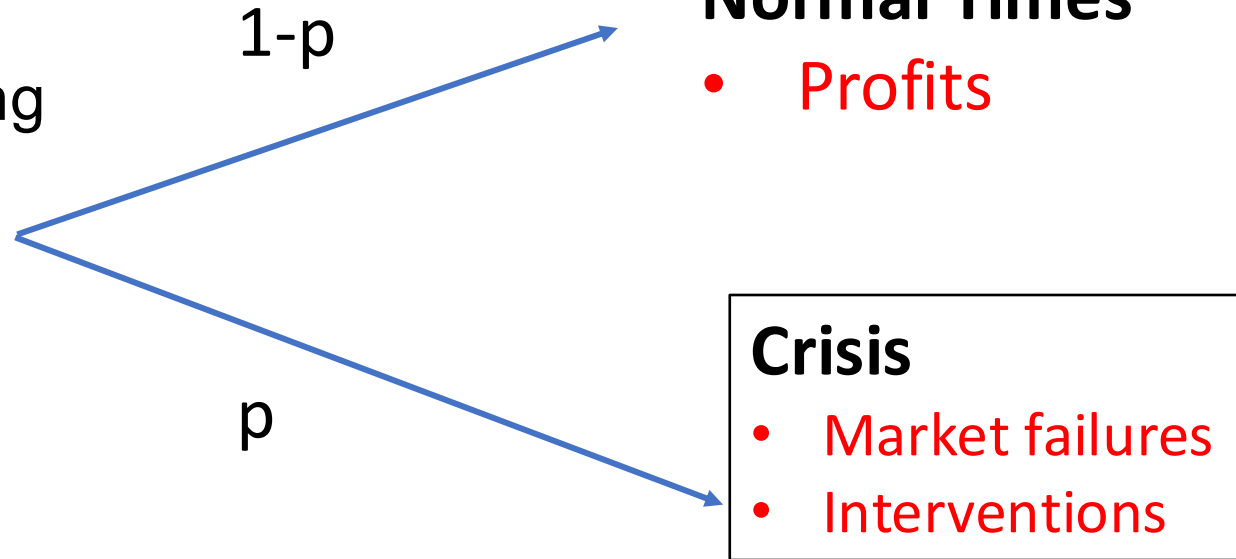
p

Normal Times

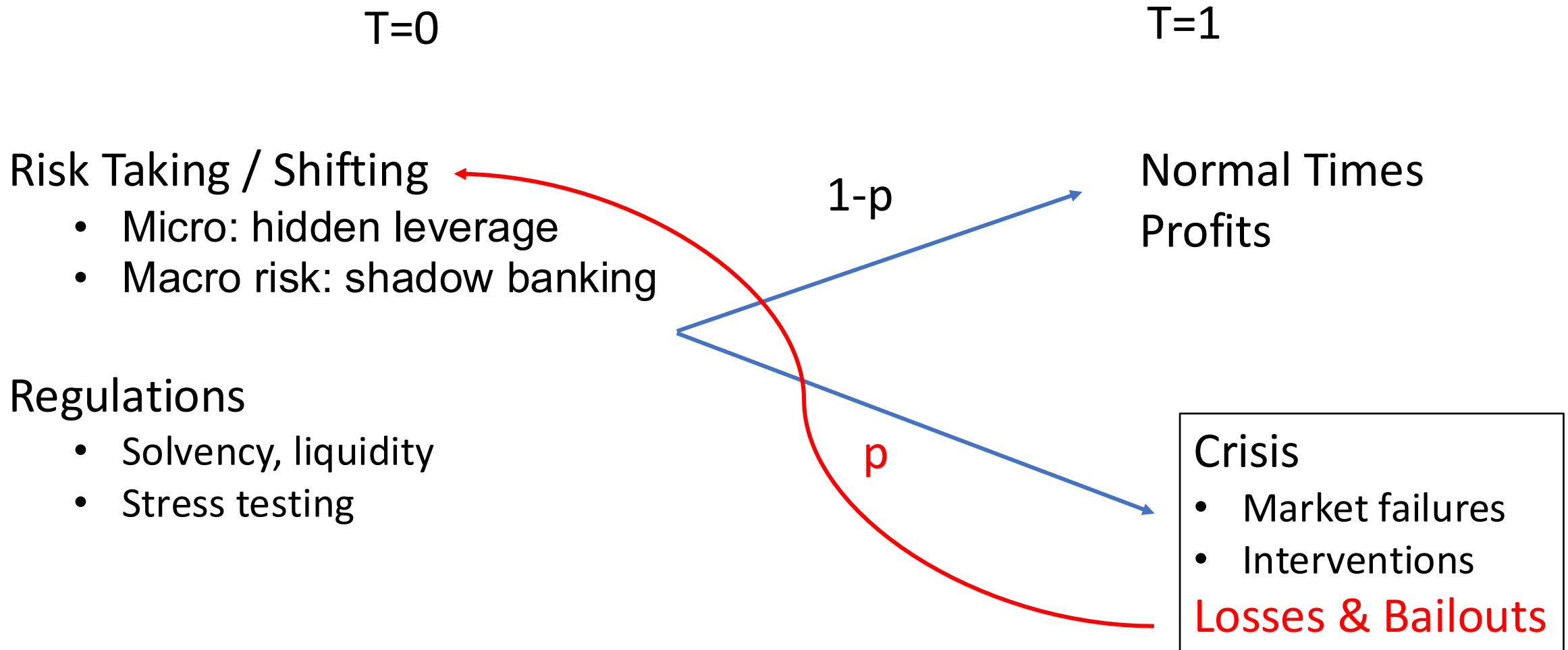
- Profits

Crisis

- Market failures
- Interventions



Moral Hazard



Crisis Mode / Right Tools

Three Classic Market Failures

Crisis

- Objective of regulator
 - Ex-post welfare
 - No commitment: Chari and Kehoe (2016)
- Market failures

Key Question:
What are the right tools?

1. Runs
2. Debt Overhang
3. Adverse Selection / Market Freeze

Type 1: Runs

Crisis

- Objective of regulator
- **Runs**

- **Tool: Deposit insurance**

Diamond and Dybvig (1983), Allen and Gale (2000), Goldstein and Pauzner (2005), Keister (2016), Dávila and Goldstein (2023)

However:

- **Uninsured deposits** Cyprus; Drechsler, Savov, Schnabl, Wang (2024)
- **Fiscal Space** Spain

Type 2: Debt Overhang

Crisis

- Objective of regulator
 - $\text{Min}\{\text{cost to taxpayers}\} \text{ s.t. } \{\text{Welfare} > W\}$
- Credit crunch

Debt Overhang (Philippon and Schnabl, 2013)



Optimal Intervention against Debt Overhang

Crisis

- Objective of regulator
 - $\text{Min}\{\text{cost to taxpayers}\} \text{ s.t. } \{\text{Welfare} > W\}$
- Market failures

Debt Overhang (Philippon and Schnabl, 2013)

- Efficient recapitalization program **injects capital**
- .. against **preferred stock & warrants**
- .. to reduce opportunistic participation

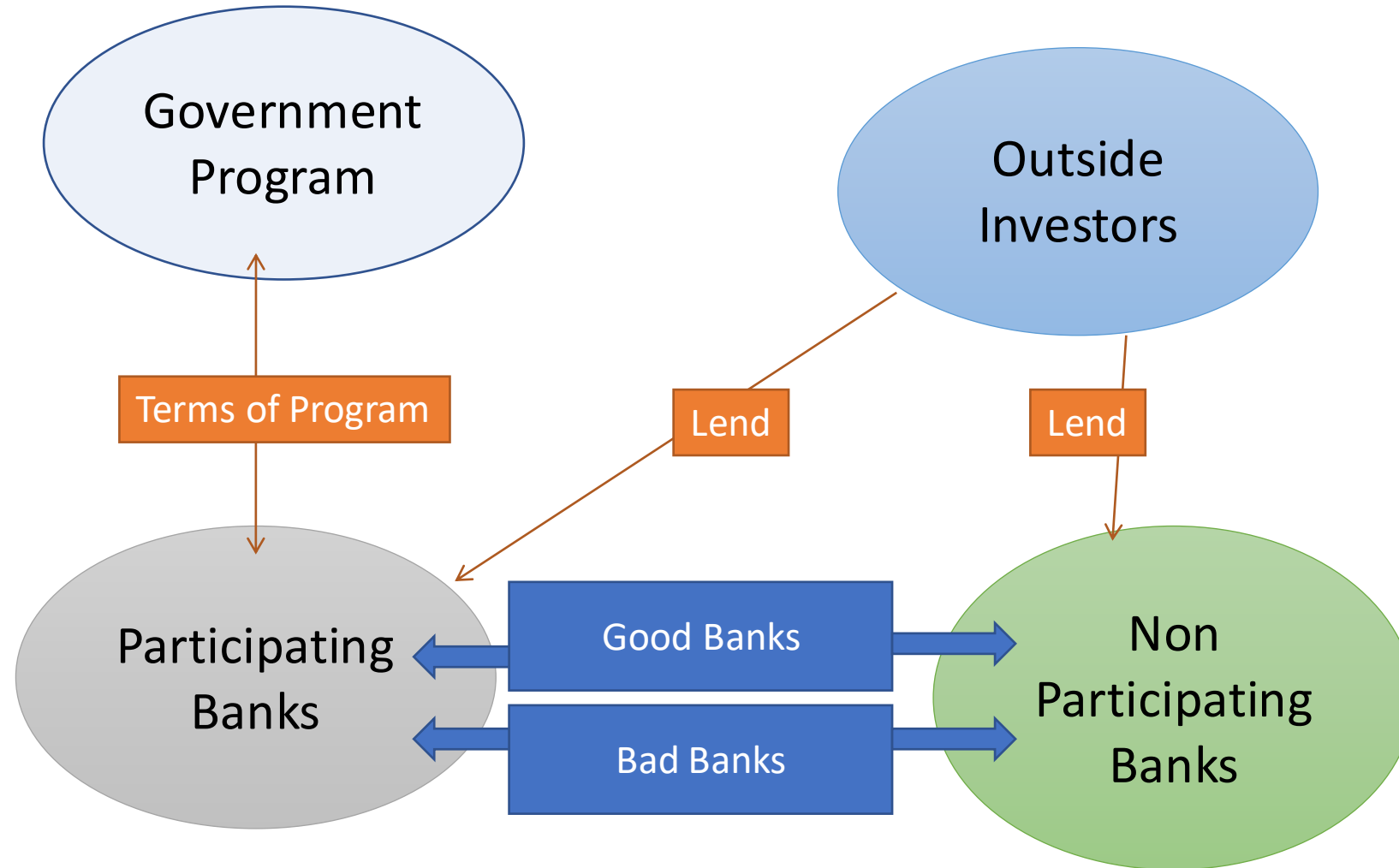
Type 3: Market Freeze

Crisis

- Objective of regulator
 - $\text{Min}\{\text{cost to taxpayers}\} \text{ s.t. } \{\text{Welfare} > W\}$
- Market failures

Adverse Selection (Philippon and Skreta 2012, Tirole 2012)

Investment at Time 1



Crisis

- Objective of regulator
 - $\text{Min}\{\text{cost to taxpayers}\} \text{ s.t. } \{\text{Welfare} > W\}$
- Market failures

Adverse Selection (Philippon and Skreta 2012, Tirole 2012)

- Optimal instrument: **debt guarantee or direct lending**
- Efficiency of intervention assessed by its **impact on the market interest rate**,
not by size of program
- **No need to shut down markets**

Lesson 1: Appropriate Tools

Lesson #1: Appropriate tools

- Optimal instrument aligned with market failure
 - Deposit Insurance against runs
 - Equity and warrants against debt overhang
 - Guarantees against credit freezes
 - Asset purchase rarely a good idea

A Broader Perspective on Moral Hazard

Moral Hazard

- If government creates moral hazard, is no fiscal space in crisis a solution?
 - Naïve / first generation model: yes
 - My view: no, need commitment to strong AQR instead, and a backstop
- If bailouts are unavoidable, is too-big-to-fail problem hopeless?
 - Naïve / first generation model: yes
 - My view: no, need good micro-prudential / resolution tools for good incentives

Runs vs Lemons (Faria-e-Castro et al. 2017)

Objective of regulator

- $\text{Min}\{\text{cost to taxpayers}\} \text{ s.t. } \{\text{Welfare} > W\}$

Credit crunch & disruptions

2 frictions

- Runs & Adv Selection

2 interventions

- Bailouts & Disclosure (AQR)

Crises

- Objective of regulator
 - Min{cost to taxpayers} s.t. {Welfare>W}
- Market failures

Asset quality reviews / Stress Testing (AQR-ST)

- Unfreeze the market but can create runs
- Rich governments do better
 - More aggressive AQR as fiscal space makes government less risk averse
 - → Inefficient to restrict government bailout options

Moral hazard: the first-generation view

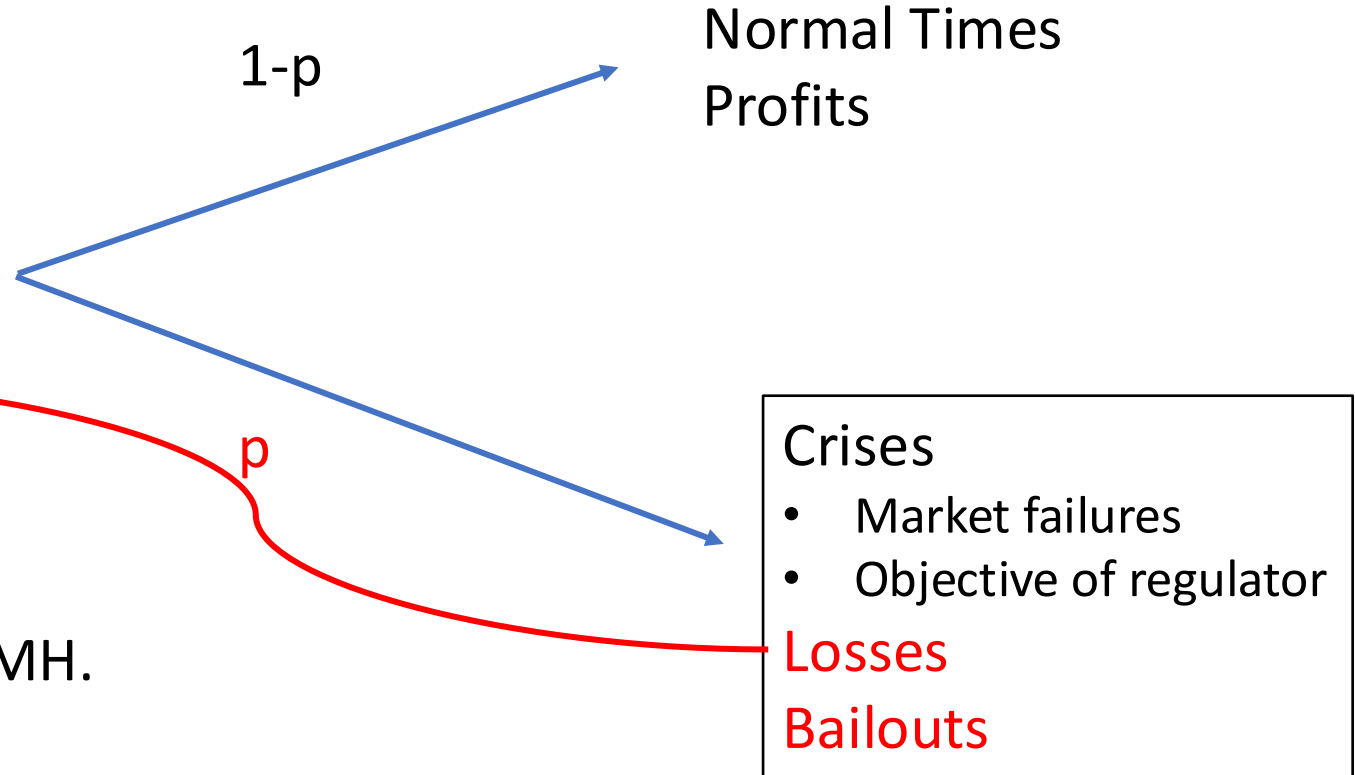
Key idea:

Cost to taxpayers
= Transfer to risk takers

Moral Hazard $\sim E[\text{transfer}]$

So, $\min\{\text{cost}\}$ is correct obj. with MH.

Yes but..



Moral Hazard and Bailouts: Volume vs Distribution

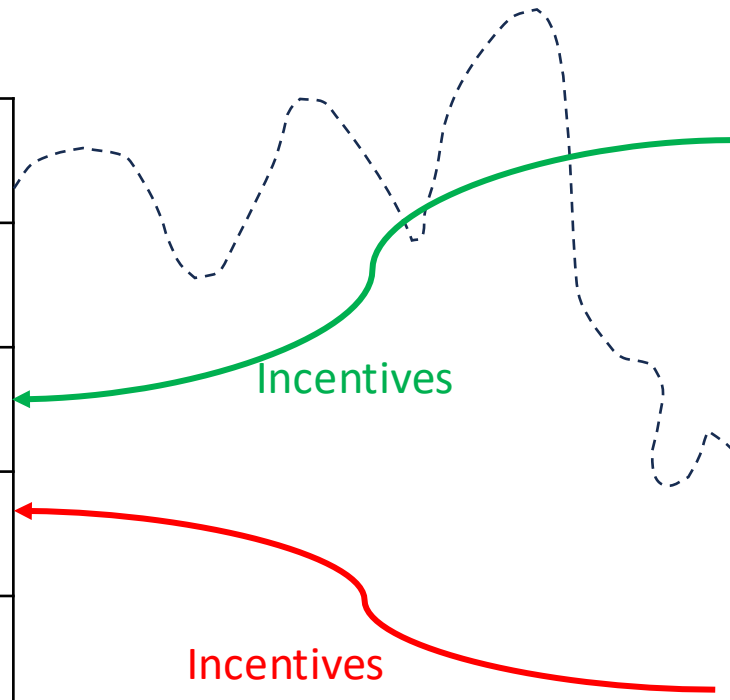
(Philippon-Wang 2023)

Ex Ante, regulation

Ex Post, crisis

Bank A
Bank B
Bank C
Bank D
Bank E

Bank 1
Bank 2
Bank 3
Bank 4
Bank 5



Rank them and let the worst one fail

Bailouts: Volume vs Distribution

(Philippon-Wang 2023)

- If banks are substitutes, get first best even if government has no commitment
- With limited liability, moral hazard decreases when government has deep pockets
- Losses on shareholders and bond holders are good for incentives
 - Mergers, including loss sharing subsidies

Lesson 2: On Moral Hazard

Lesson #2: Moral Hazard

- *First generation models of MH are basically wrong*
- **Potential bailout as insurance policy** -> aggressive Stress Test
 - limiting funds can lower welfare and even increase average bailout size
- **Distribution matters**
 - Micro incentives, limiting funds again lowers welfare, complementarity with PCA
- Two questions regulators should ask themselves
 1. Total cost / profits : how much will we loose?
 2. Distribution of P&L: do we punish/reward the right agents?

Regarding Deposit Insurance

- Good
 - Protects depositors & allows orderly resolution
- Bad
 - Encourages Risk taking & creates implicit liability for government
- Key point in context of eurozone
 - Do we need full EU-backed deposit insurance? Probably not.
 - But need enough to equalize funding costs across EU regions in case of asymmetric shocks
 - And backstop in exchange for strong PCA/disclosure

Three Lessons and Two Challenges

- Framework for planning and using the right tools in the right sequence
 1. Complementarity between micro and macro tools
 2. Limiting moral hazard does not imply limiting available funds
 3. Importance of distribution of P&Ls for incentives
- Challenges
 1. Speed & Segmentation
 2. Market Power & Market Discipline

1: Speed & Segmentation

- Previous arguments assume minimum amount of time to intervene
 - Announce program, deploy funds, etc. Reasonable assumption in the past. Runs were surprisingly slow. Time to find a buyer.
- But
 - SVB: What if we can't even get to the "weekend"?
 - Runs are definitely not random (Correia, Luck & Verner, 2024)
 - Are they getting faster? (Cipriani, Eisenbach, Kovner, 2024)
 - LDI: What if private capital is slow moving?

1: Speed & Segmentation: consequences

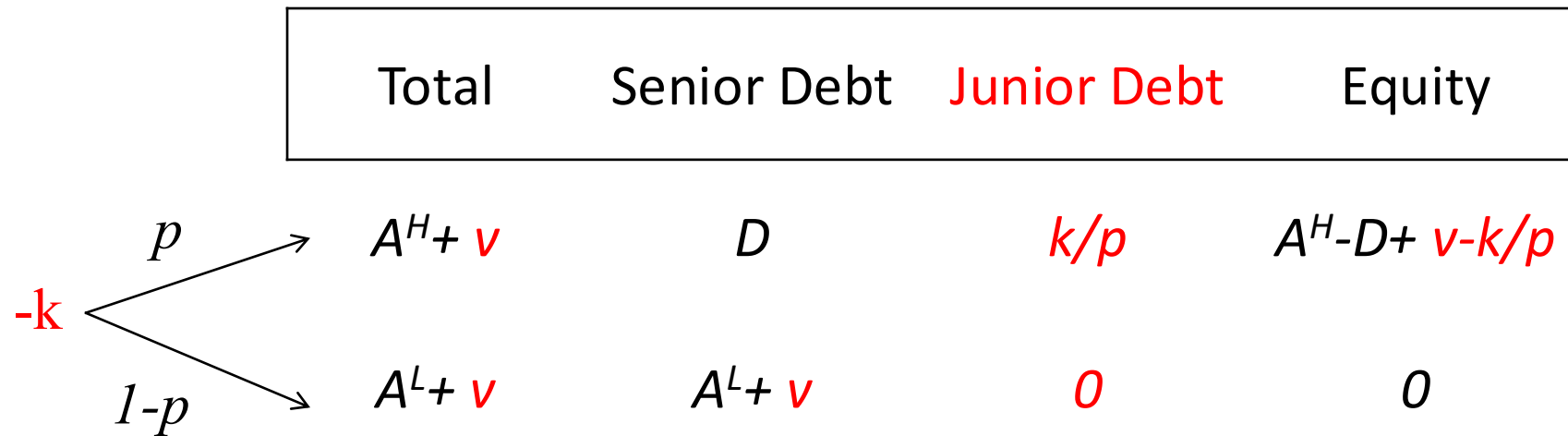
- Speed: **when** you send the money matters
 - Online finance / real time market reactions
- Segmentation: **where** you send the money matters
 - Not altogether bad. Targeted interventions feasible. Less conflict with other objectives.
- Common consequence : Increased cost of failing to run the correct stress test

2: Market power vs market discipline

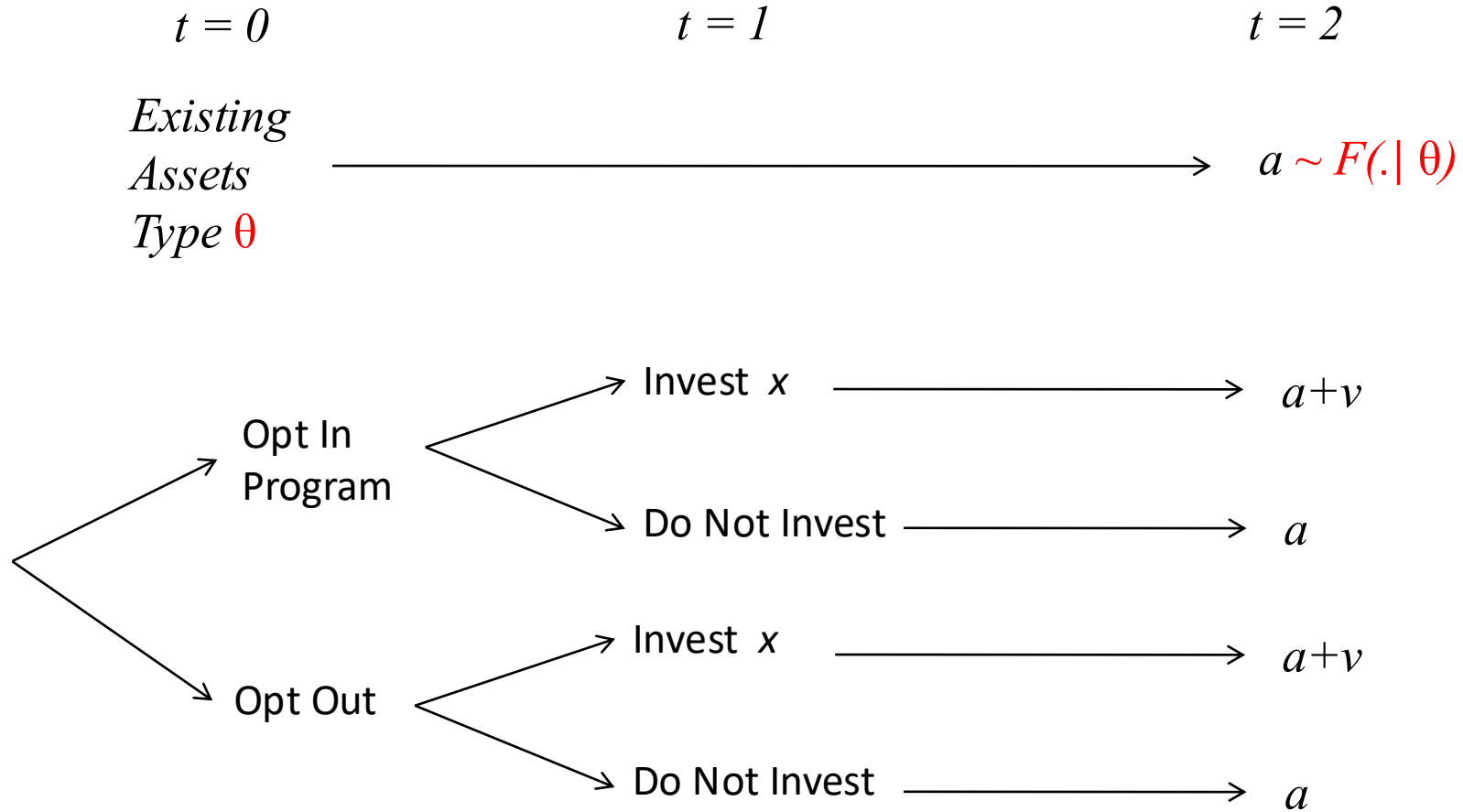
- Concentration → strategic behavior
- Relates to speed issue
 - Slow down the help (Rajan-Diamond)
 - Speed up the risk (predatory trading)
- Relates to discipline and cost of intervention
 - Time the intervention of CB
 - Increased costs

Appendix

A1: Debt overhang: Underinvestment in Safe Projects

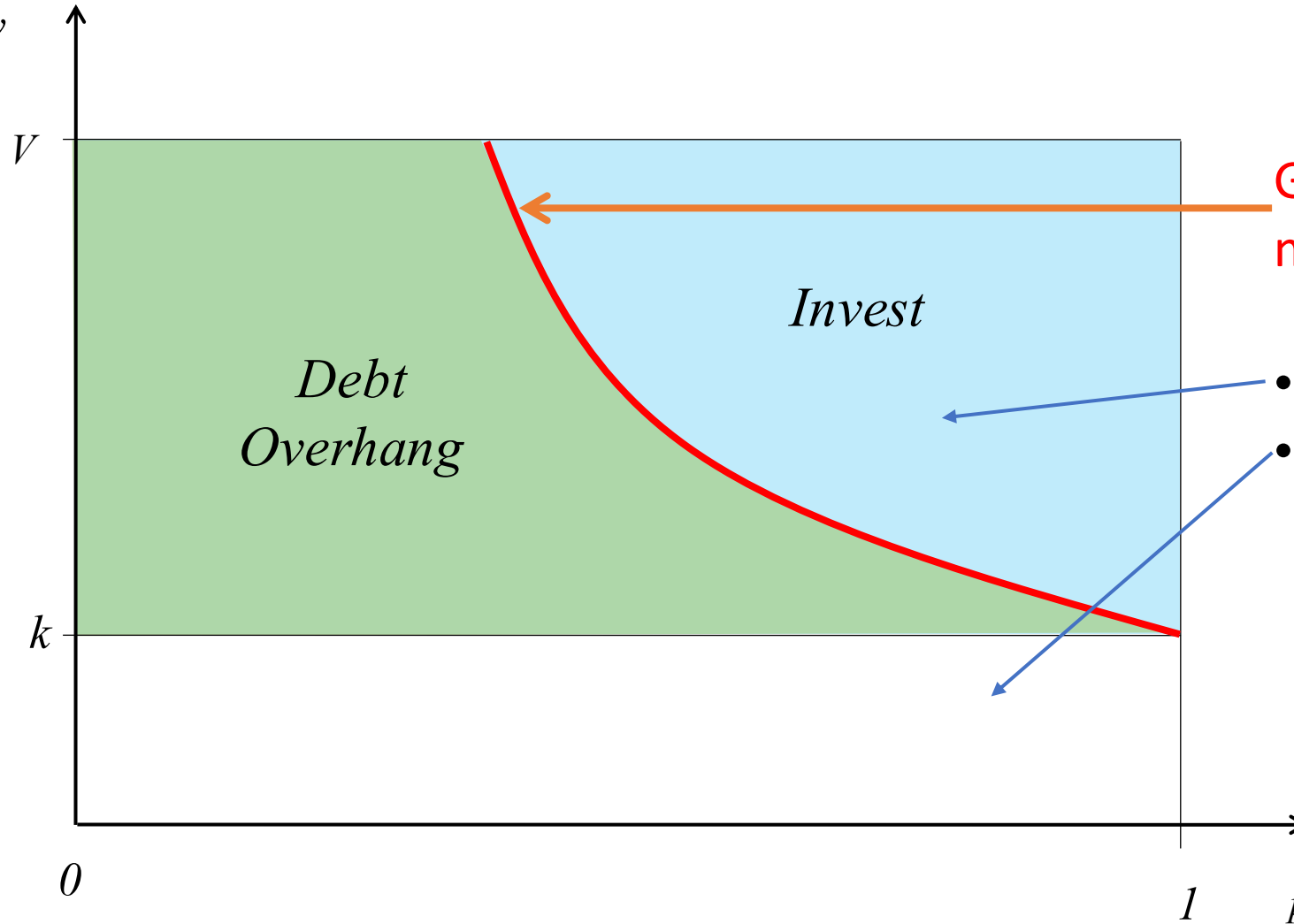


A2: Adverse Selection: Timing & Technology



Philippon-Schnabl (2013)

Value of new project : v

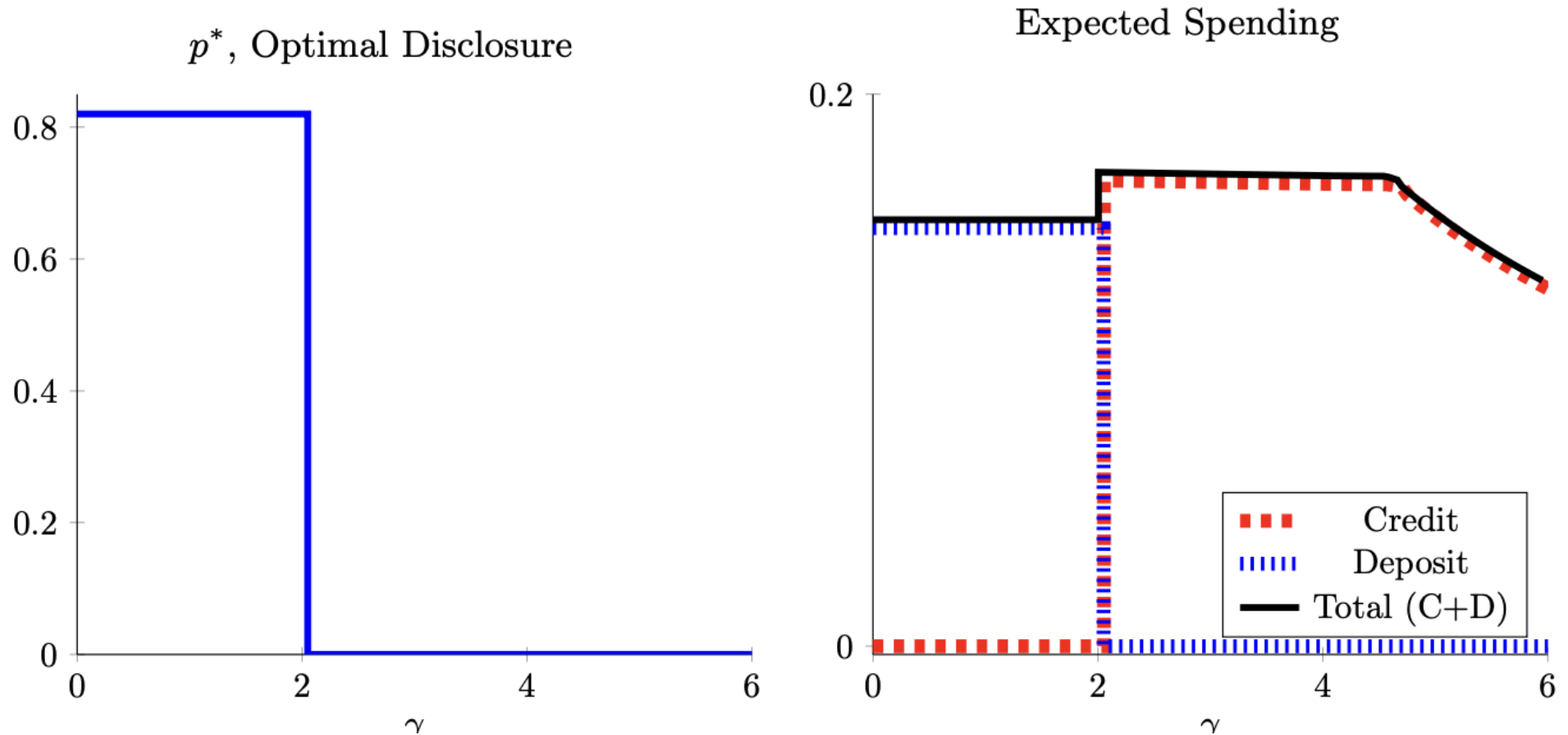


Goal: Extend this region at minimum cost

- Information rents
- Inefficiencies

A3: Runs vs Lemons

FIGURE 9
Paradox of Fiscal Capacity

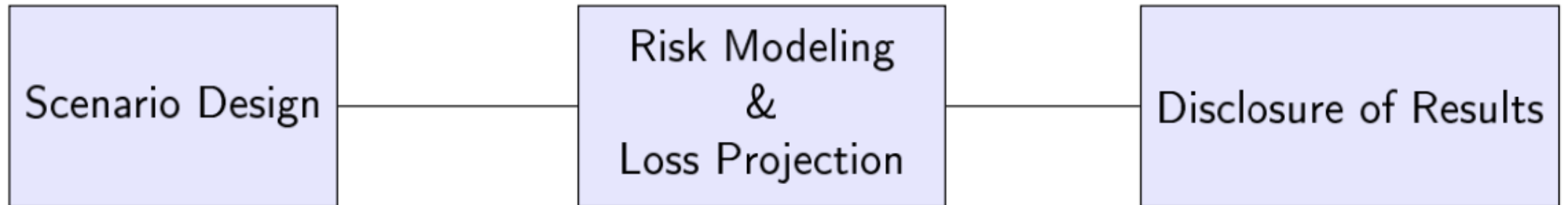


(Faria-e-Castro et al. 2017)

Designing Stress Scenarios

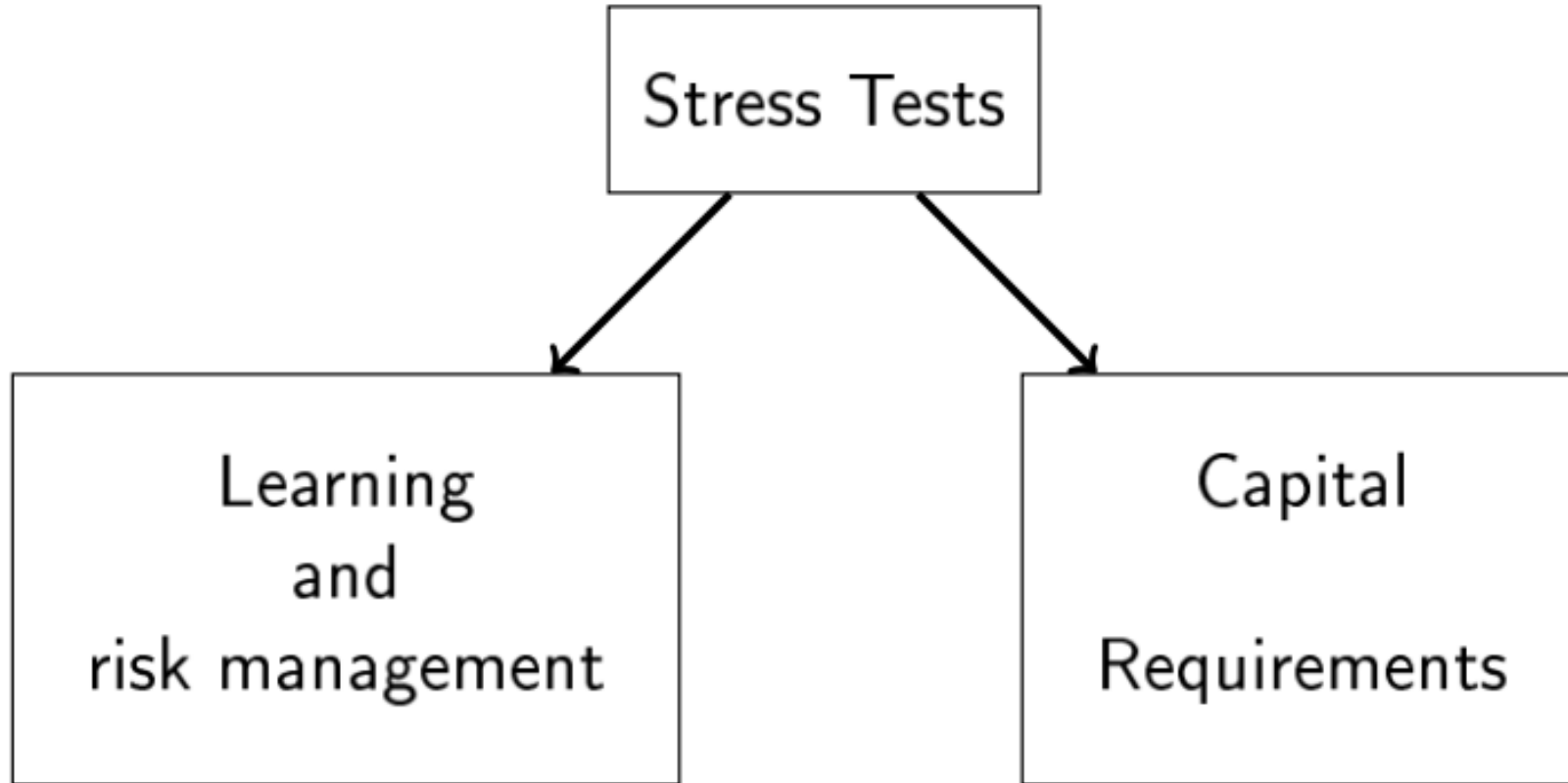
(Parlatore-Philippon 2023)

- Stress tests are used in liquidity/risk management and financial supervision

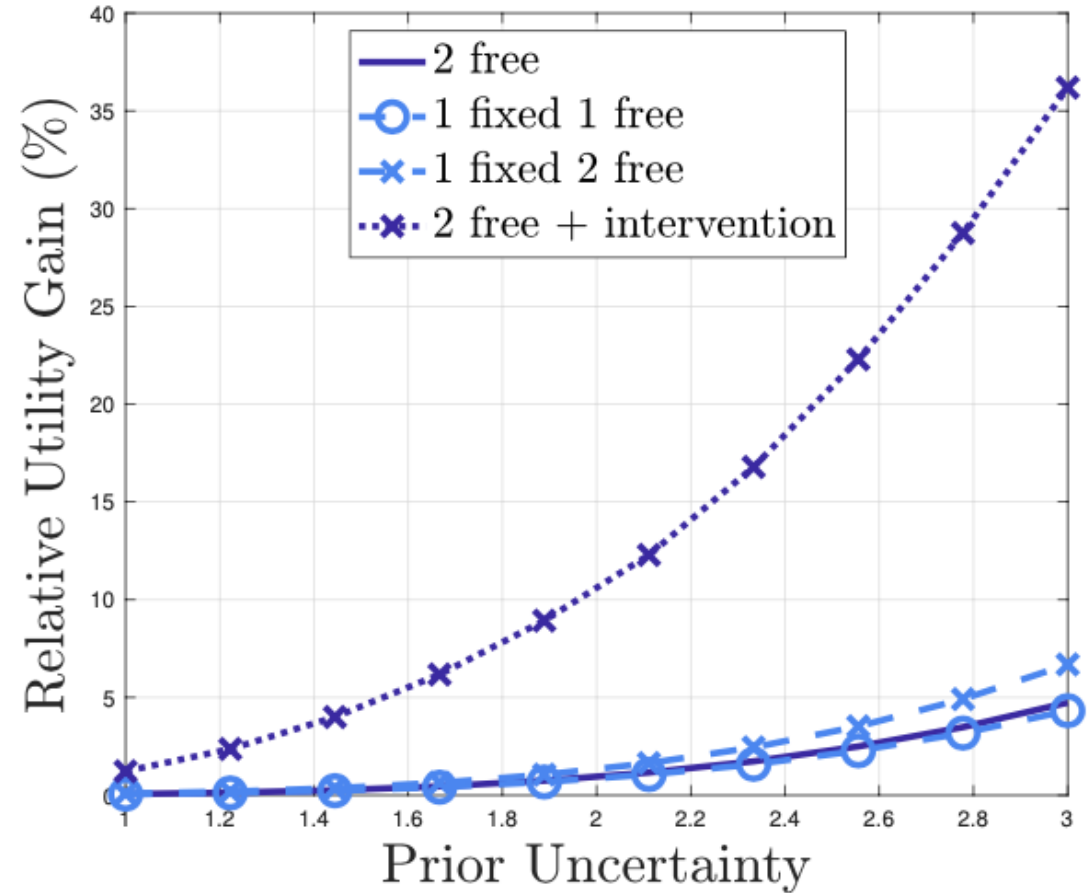
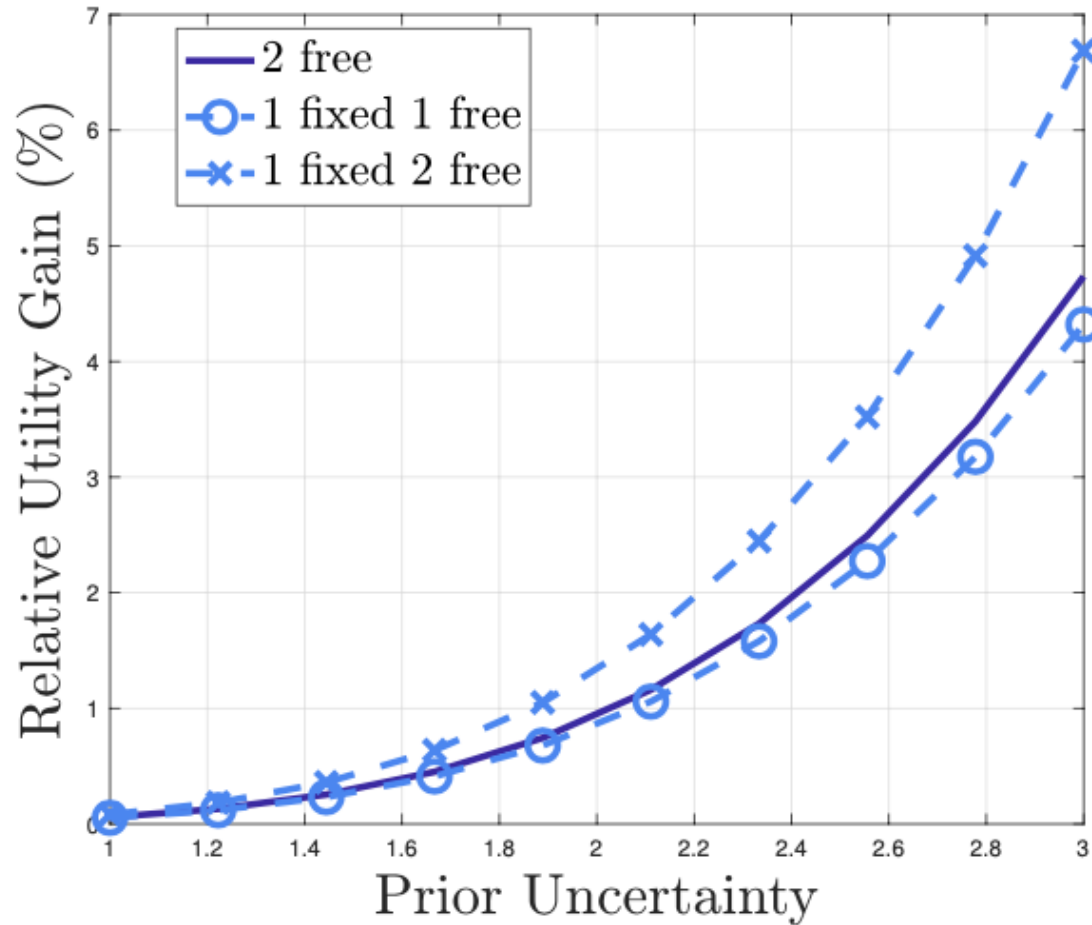


- Literature focuses on disclosure of results
- **No guidance on how to design the forward-looking scenarios**
- Stress tests as a learning mechanism or as practical way to set capital requirements?

Using Stress Tests: A Conflict?



Gains relative to gains from a 1% decrease in cost of capital requirements



Lesson #3: Stress Testing

- Baseline vs explorations
- Complementarity between learning and targeted interventions (PCA)
 - Again!
 - Learning has limited value for broad cap. Requirements
- *Ask the right questions*
 - *Governance: what if these questions are “uncomfortable” ?*

A 4: Designing Stress Scenarios

(Parlatore-Philippon 2023)

- Losses $y = x s + e$
- Ask about y to learn about x

