



International Association
of Deposit Insurers

Basel, Switzerland
23-24 May 2019

2019 Biennial IADI Research Conference
Towards Building a More Resilient Financial System –
Challenges in Deposit Insurance and Bank Resolution

The Spillover Effects of Forced Bank Recapitalizations and Government Guarantees

Arun Gupta

Federal Reserve Board

Regulatory Application

- ❖ A bank owns two subsidiaries
 - One strong subsidiary in NY
 - One weak subsidiary in Texas

Regulatory Application

- ❖ A bank owns two subsidiaries
 - One strong subsidiary in NY
 - » Highly capitalized due to profits earned in regional boom
 - One weak subsidiary in Texas

Regulatory Application

- ❖ A bank owns two subsidiaries
 - One strong subsidiary in NY
 - » Highly capitalized due to profits earned in regional boom
 - One weak subsidiary in Texas
 - » Undercapitalized due to losses suffered in regional recession

Motivation

- ❖ Regulator insures deposits at weak subsidiary

Motivation

- ❖ Regulator insures deposits at weak subsidiary
- ❖ Parent is well-capitalized, but chooses not to replenish

Motivation

- ❖ Regulator insures deposits at weak subsidiary
- ❖ Parent is well-capitalized, but chooses not to replenish
- ❖ Regulator can threaten to remove weak subsidiary's charter

Motivation

- ❖ Regulator insures deposits at weak subsidiary
- ❖ Parent is well-capitalized, but chooses not to replenish
- ❖ Regulator can threaten to remove weak subsidiary's charter
- ❖ Parent protected by limited liability

Motivation

- ❖ Regulator insures deposits at weak subsidiary
- ❖ Parent is well-capitalized, but chooses not to replenish
- ❖ Regulator can threaten to remove weak subsidiary's charter
- ❖ Parent protected by limited liability
- ❖ Parent shifts risk onto the deposit insurance fund

Motivation

- ❖ Regulator insures deposits at weak subsidiary
- ❖ Parent is well-capitalized, but chooses not to replenish
- ❖ Regulator can threaten to remove weak subsidiary's charter
- ❖ Parent protected by limited liability
- ❖ Parent shifts risk onto the deposit insurance fund

❖ Possible Solution?

Regulator could unilaterally strengthen enforcement of capital requirement at weak sub

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » Issue new shares externally and inject equity into weak subsidiary?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » Issue new shares externally and inject equity into weak subsidiary?
 - » Transfer equity capital from strong to weak sibling?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » Issue new shares externally and inject equity into weak subsidiary?
 - » Transfer equity capital from strong to weak sibling?
 - » Shrink weak subsidiary?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » ❌ Issue new shares externally and inject equity into weak subsidiary?
 - » Transfer equity capital from strong to weak sibling?
 - » Shrink weak subsidiary?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » ❌ Issue new shares externally and inject equity into weak subsidiary?
 - » ✅ Transfer equity capital from strong to weak sibling?
 - » Shrink weak subsidiary?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » ❌ Issue new shares externally and inject equity into weak subsidiary?
 - » ✓ Transfer equity capital from strong to weak sibling?
 - » ✓ Shrink weak subsidiary?

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » ❌ Issue new shares externally and inject equity into weak subsidiary?
 - » ✓ Transfer equity capital from strong to weak sibling?
 - » ✓ Shrink weak subsidiary?
 - » ✓ **Sibling Spillover Effect: Parent shrinks lending at strong subsidiary compared to local competition**

Research Question

- ❖ If the regulator strengthens enforcement of the capital requirement at the weak subsidiary,
 - how does the parent respond?
 - » ❌ Issue new shares externally and inject equity into weak subsidiary?
 - » ✓ Transfer equity capital from strong to weak sibling?
 - » ✓ Shrink weak subsidiary?
 - » ✓ **Sibling Spillover Effect: Parent shrinks lending at strong subsidiary compared to local competition**
- ❖ Decline in lending growth at both weak and strong subs

Natural Experiment

- ❖ 1989Q1: President Bush announces the Cross-Guarantee Authority

Natural Experiment

- ❖ 1989Q1: President Bush announces the Cross-Guarantee Authority
 - If the regulator decides to revoke charter of an undercapitalized subsidiary, it now has unilateral authority to bill parent to cover losses

Natural Experiment

- ❖ 1989Q1: President Bush announces the Cross-Guarantee Authority
 - If the regulator decides to revoke charter of an undercapitalized subsidiary, it now has unilateral authority to bill parent to cover losses
 - » (1) Unexpected rise in cost of leaving subsidiaries undercapitalized

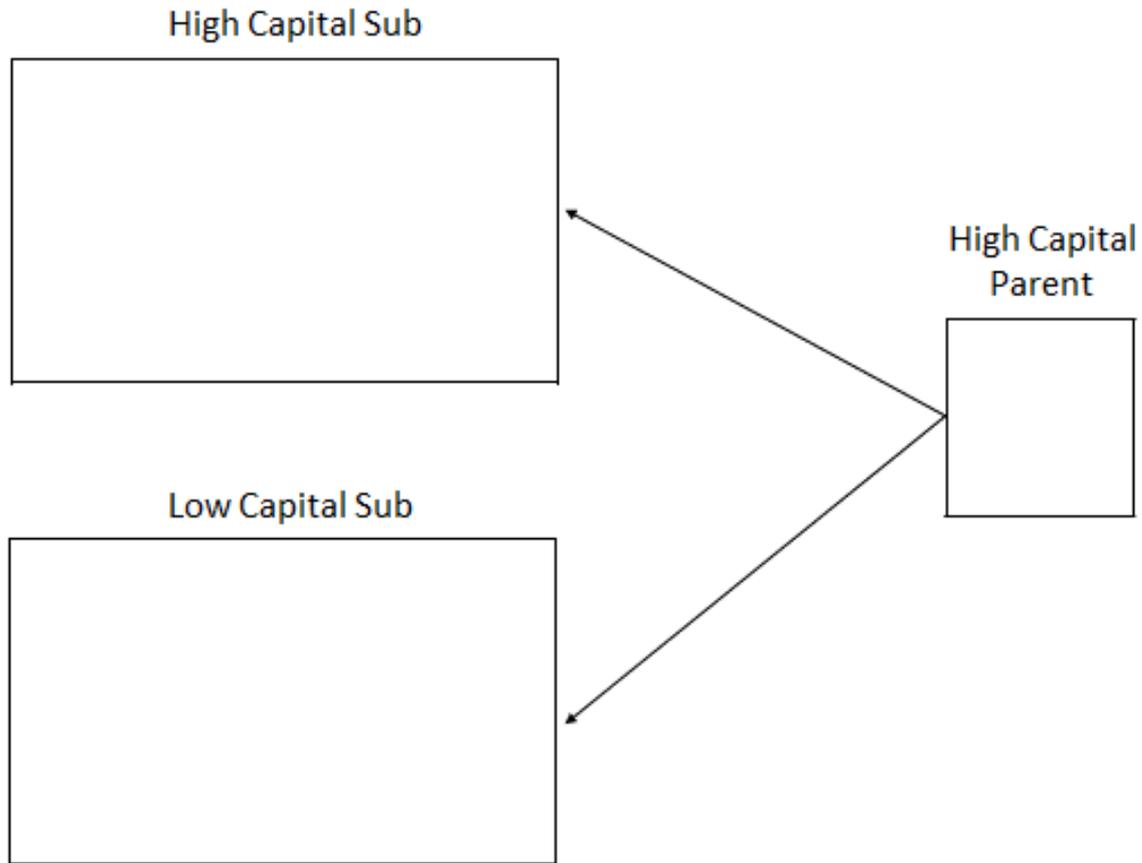
Natural Experiment

- ❖ 1989Q1: President Bush announces the Cross-Guarantee Authority
 - If the regulator decides to revoke charter of an undercapitalized subsidiary, it now has unilateral authority to bill parent to cover losses
 - » (1) Unexpected rise in cost of leaving subsidiaries undercapitalized
 - » (2) Increased probability that the regulator will pull the plug on an undercapitalized subsidiary

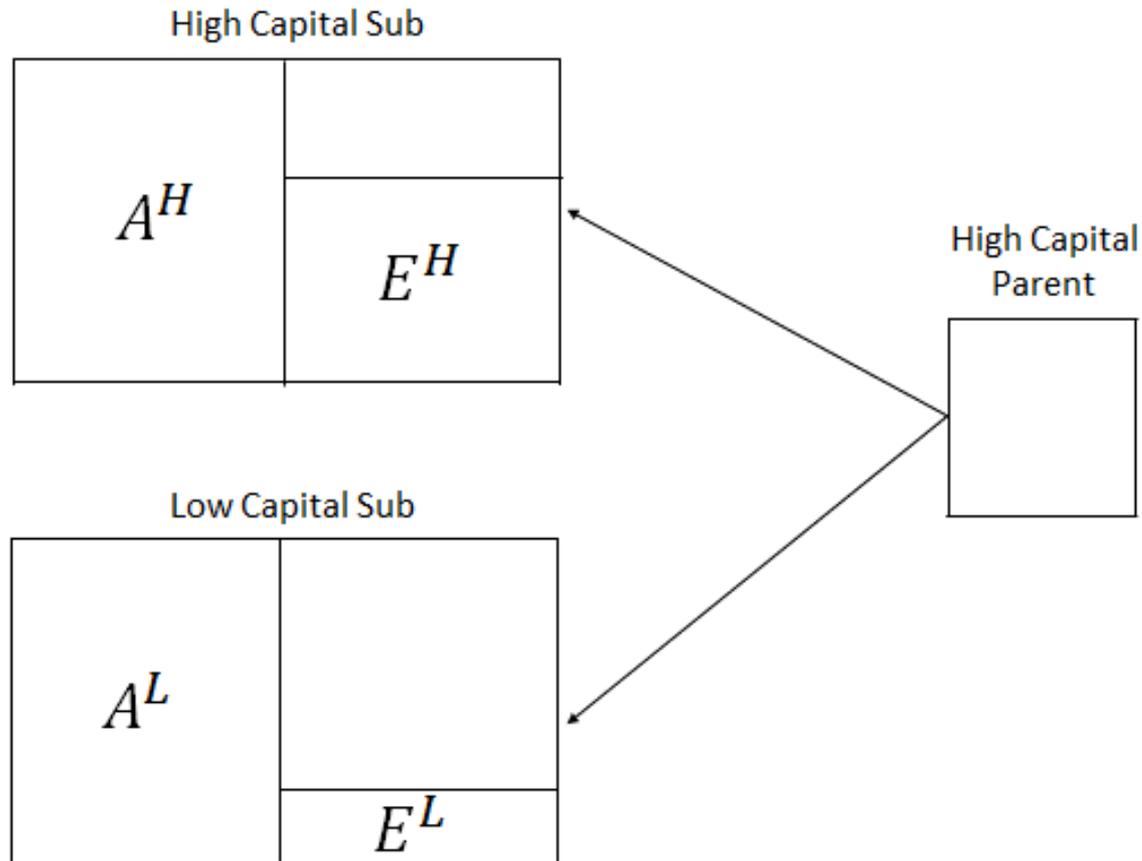
Natural Experiment

- ❖ 1989Q1: President Bush announces the Cross-Guarantee Authority
 - If the regulator decides to revoke charter of an undercapitalized subsidiary, it now has unilateral authority to bill parent to cover losses
 - » (1) Unexpected rise in cost of leaving subsidiaries undercapitalized
 - » (2) Increased probability that the regulator will pull the plug on an undercapitalized subsidiary
- ❖ Raised optimal capital ratio at weak subsidiary

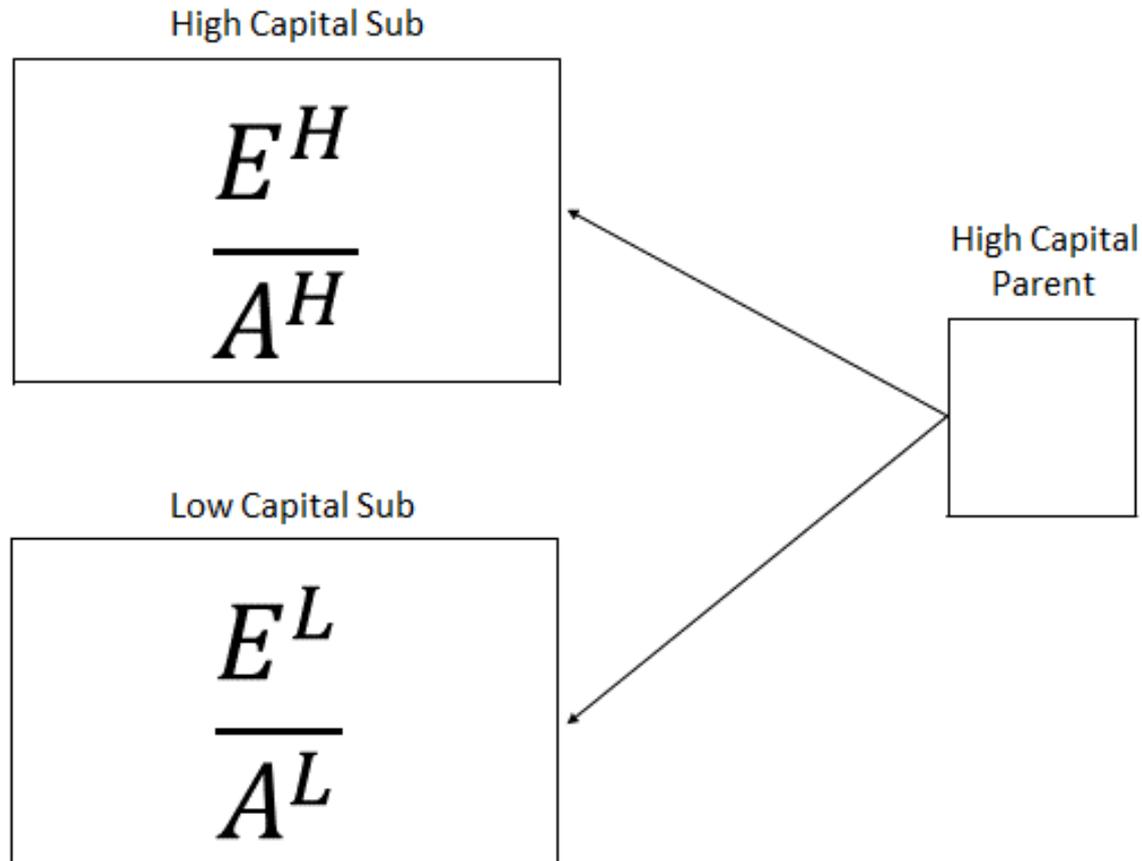
Balance Sheet View of Results



Balance Sheet View of Results



Balance Sheet View of Results



Balance Sheet View of Results

High Capital Sub

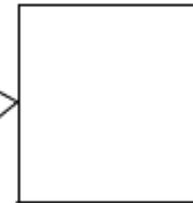
$$\frac{E^H}{A^H}$$

Low Capital Sub

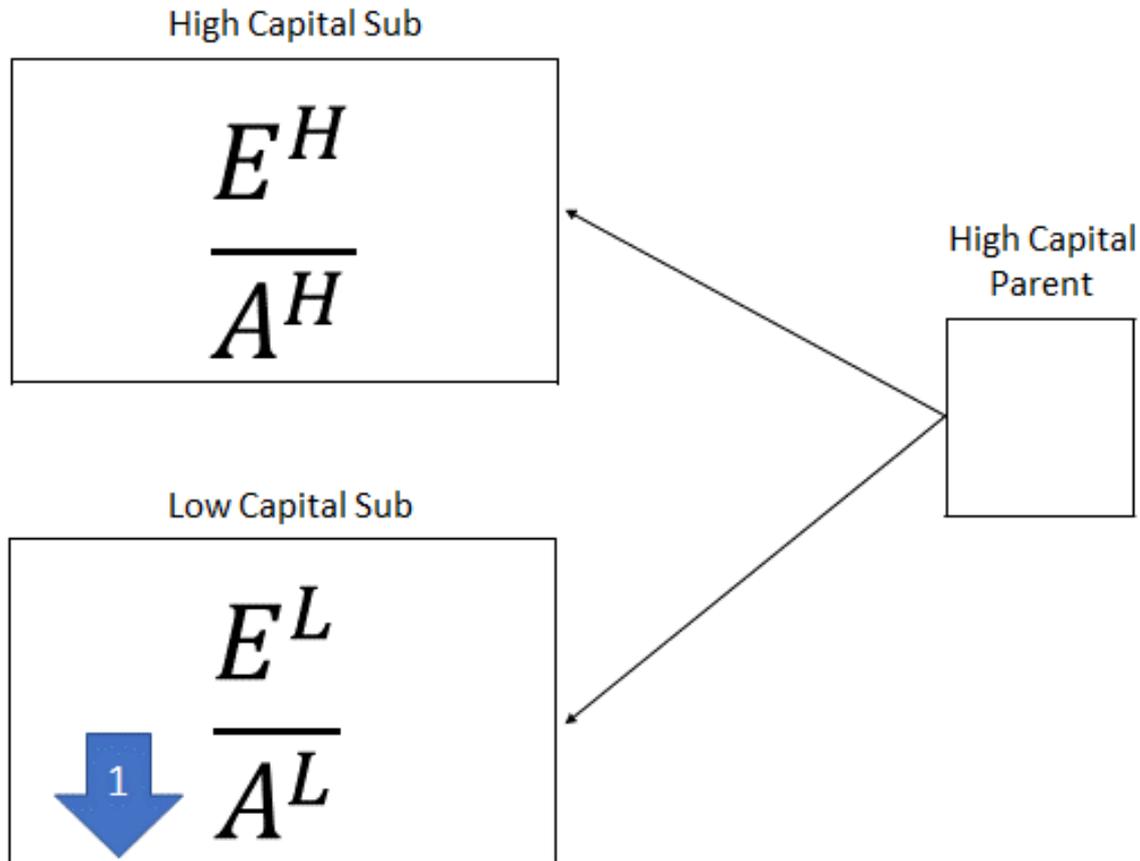

$$\frac{E^L}{A^L}$$

Surprise Law
Raises Optimal
Capital Ratio

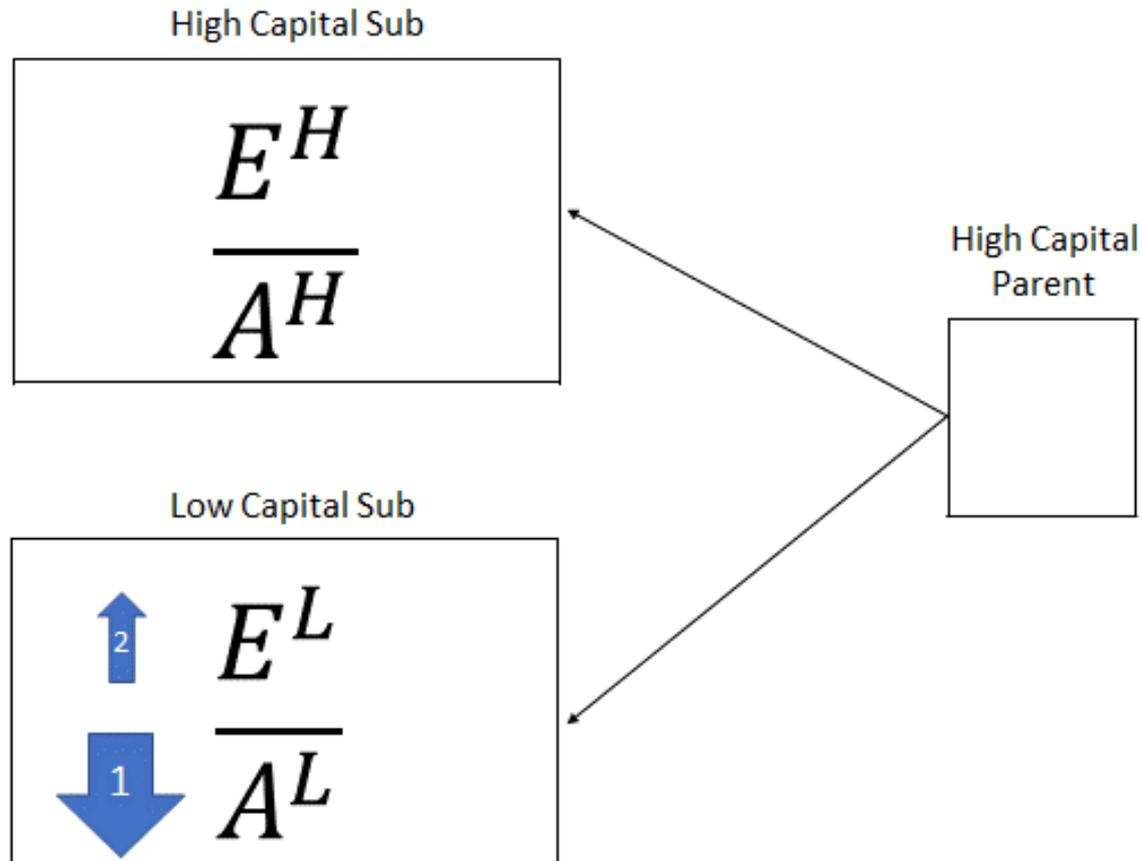
High Capital
Parent



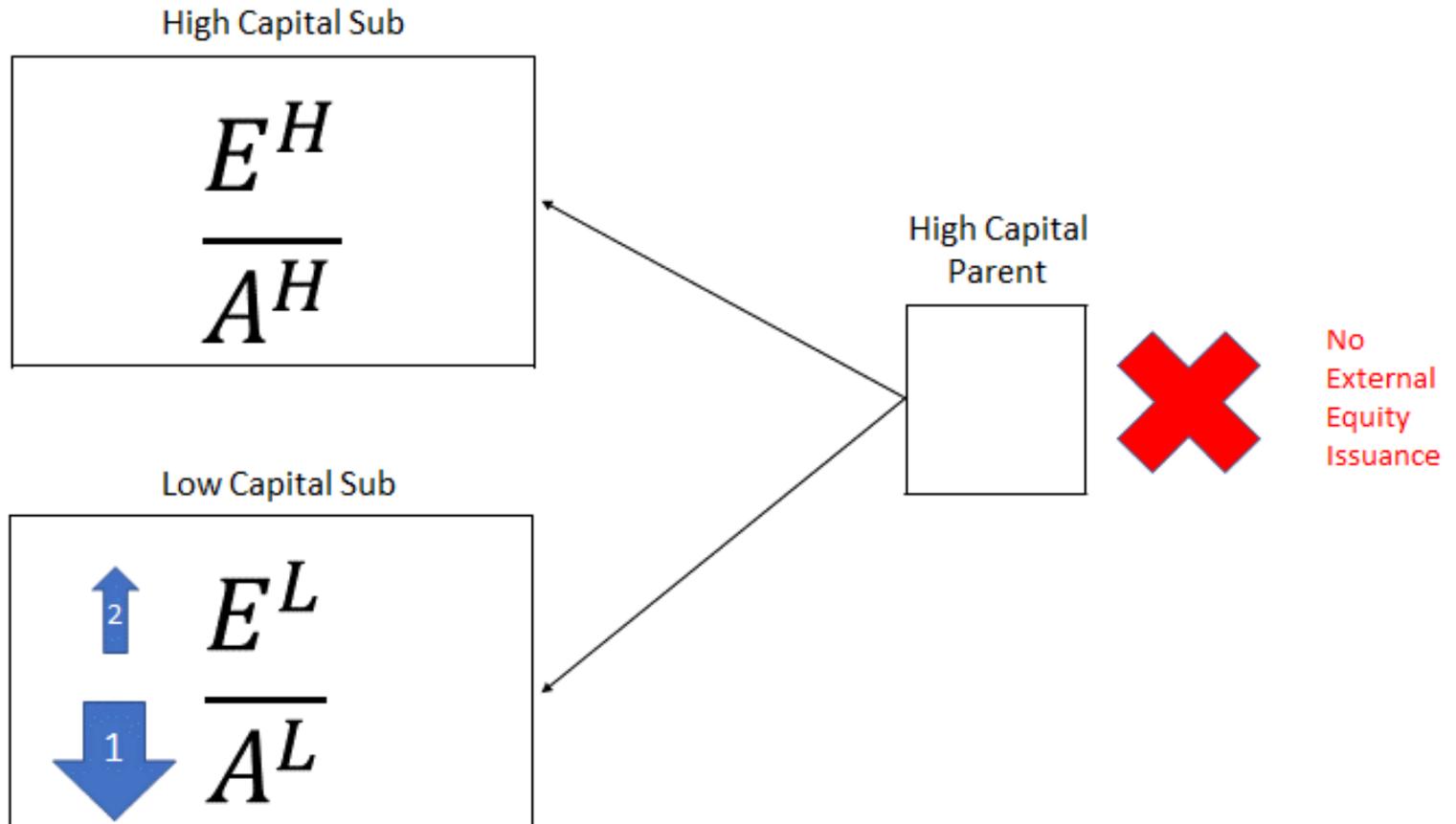
Balance Sheet View of Results



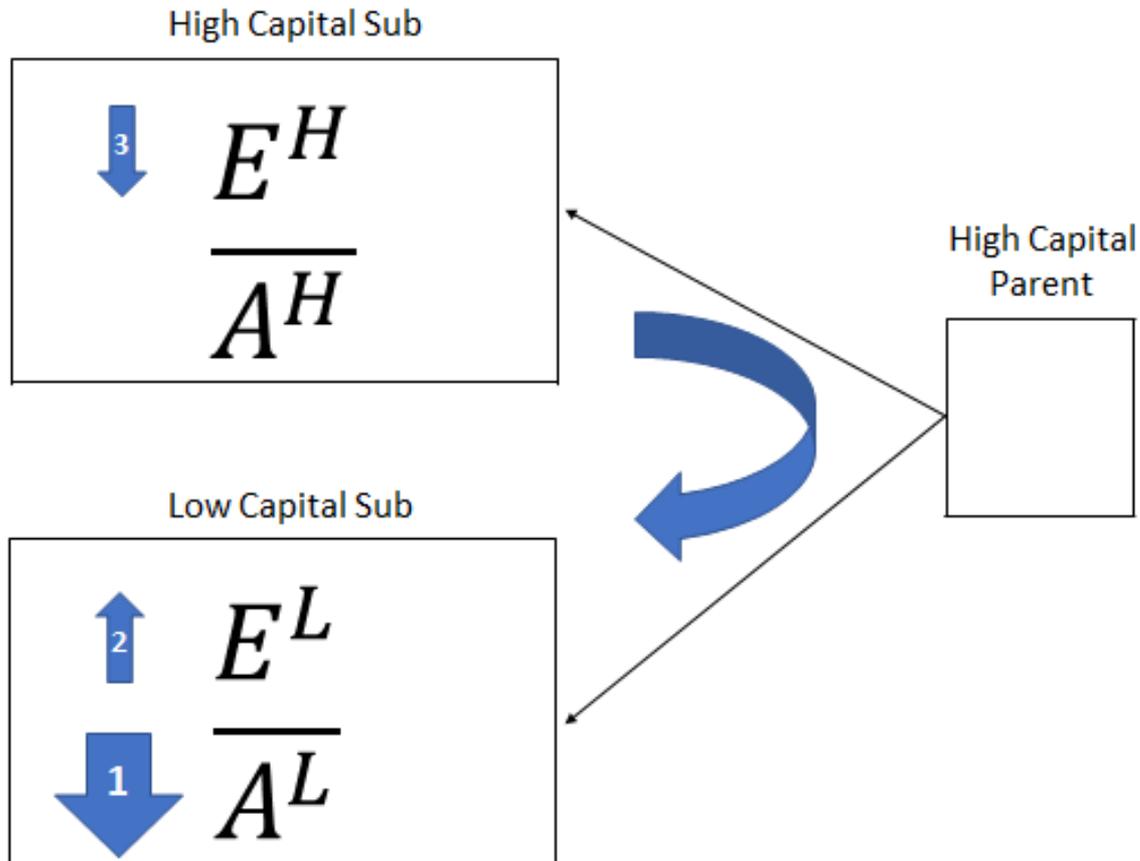
Balance Sheet View of Results



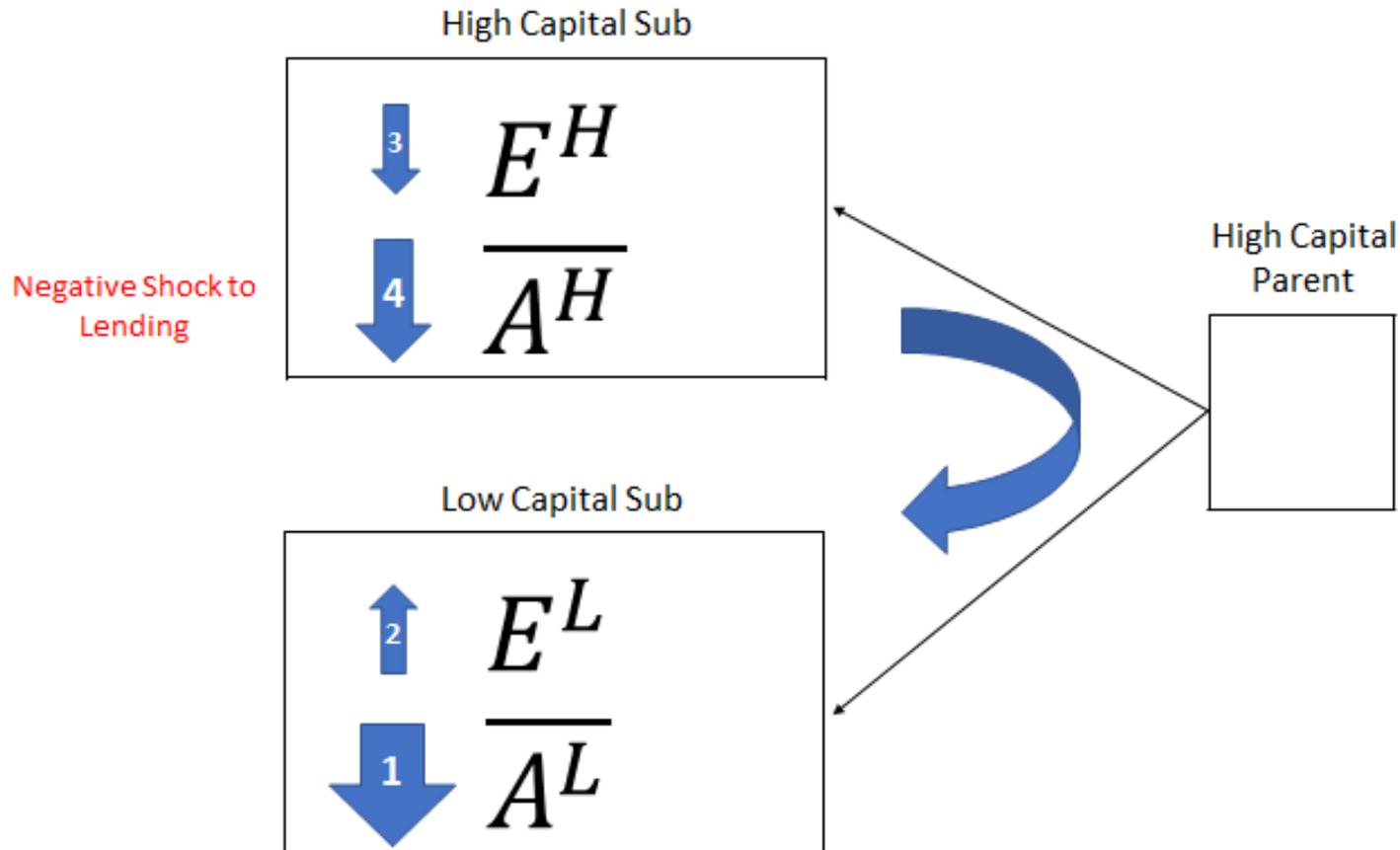
Balance Sheet View of Results



Balance Sheet View of Results

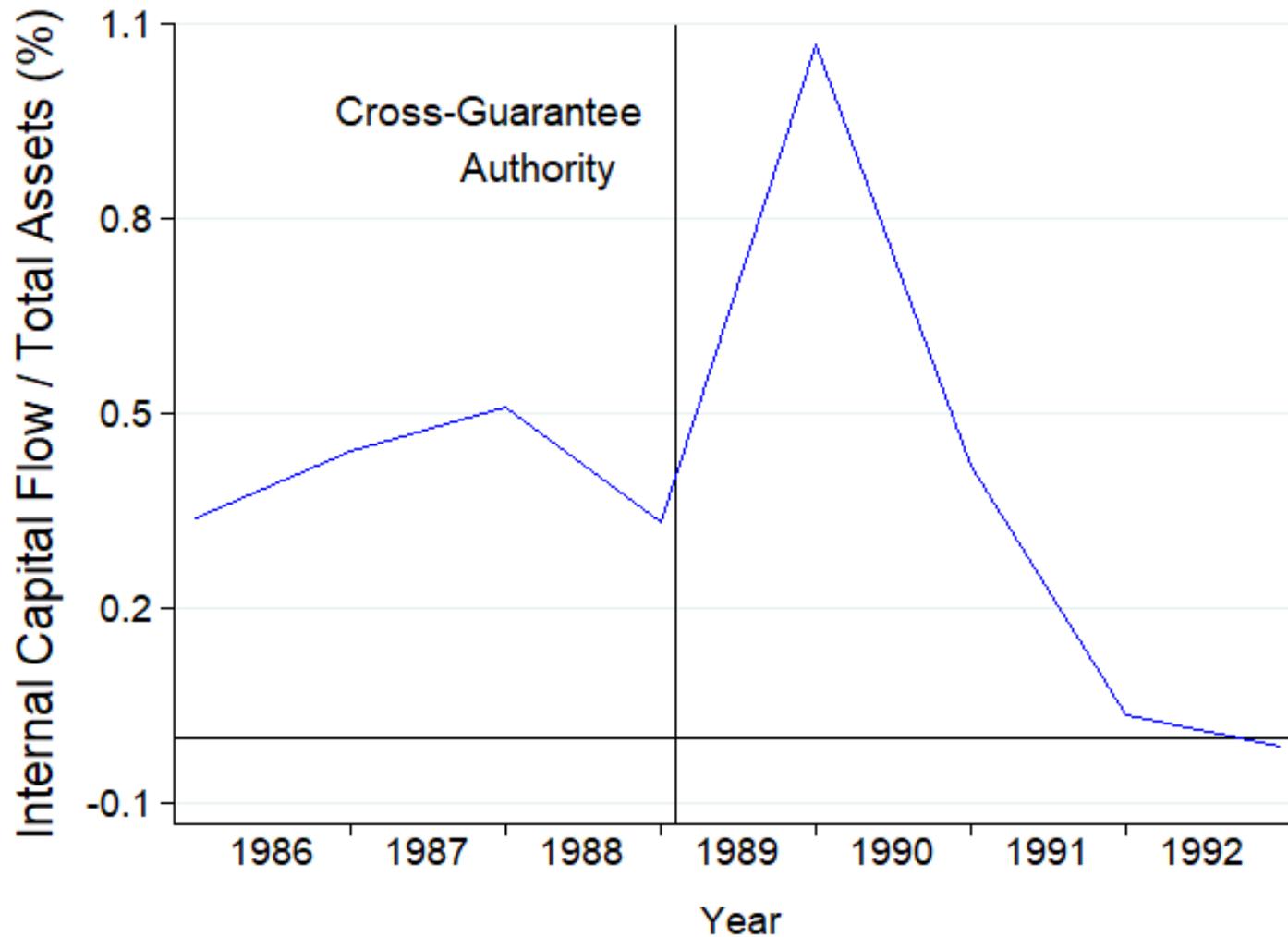


Balance Sheet View of Results

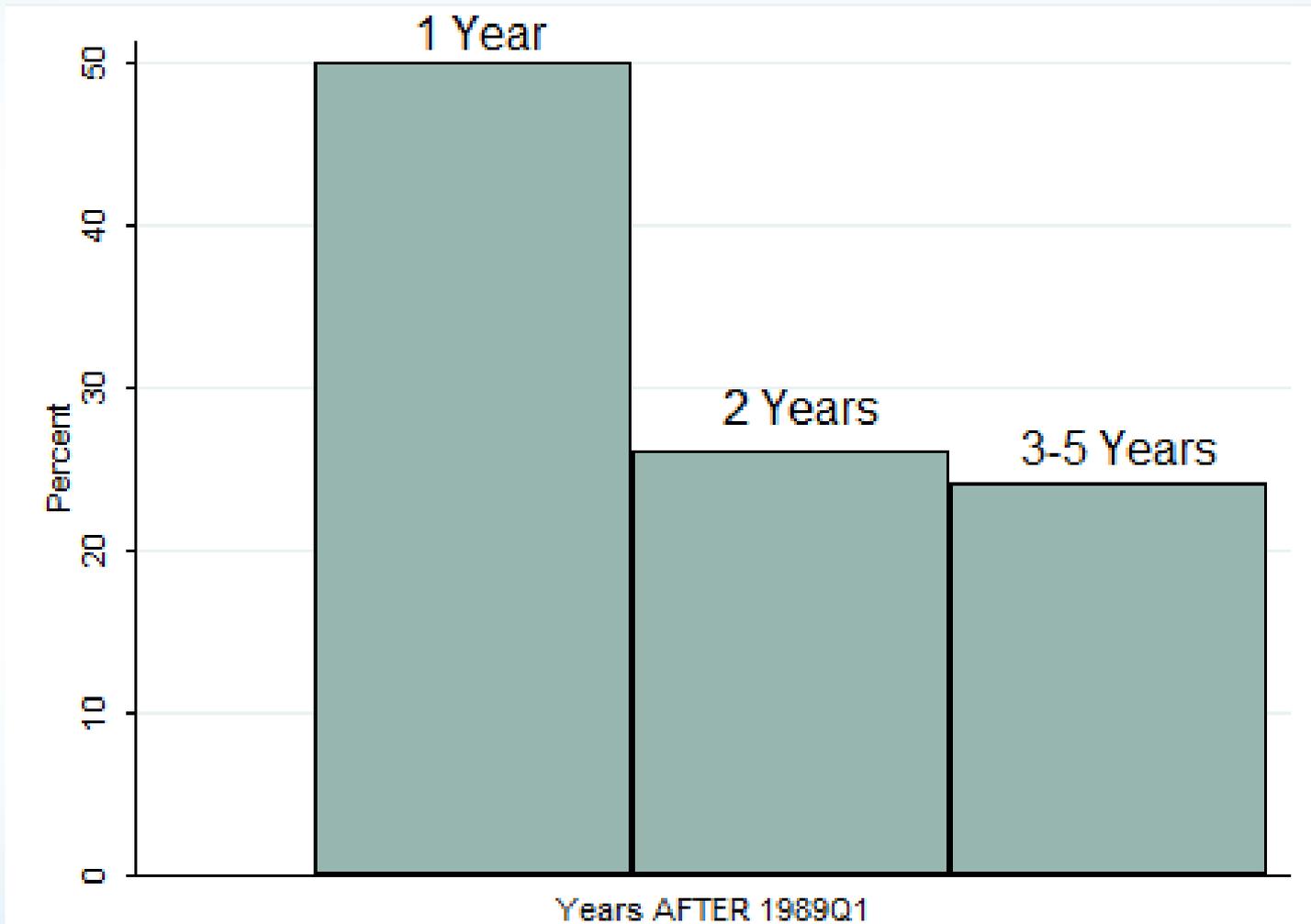


INTERNAL CAPITAL TRANSFER RESULTS

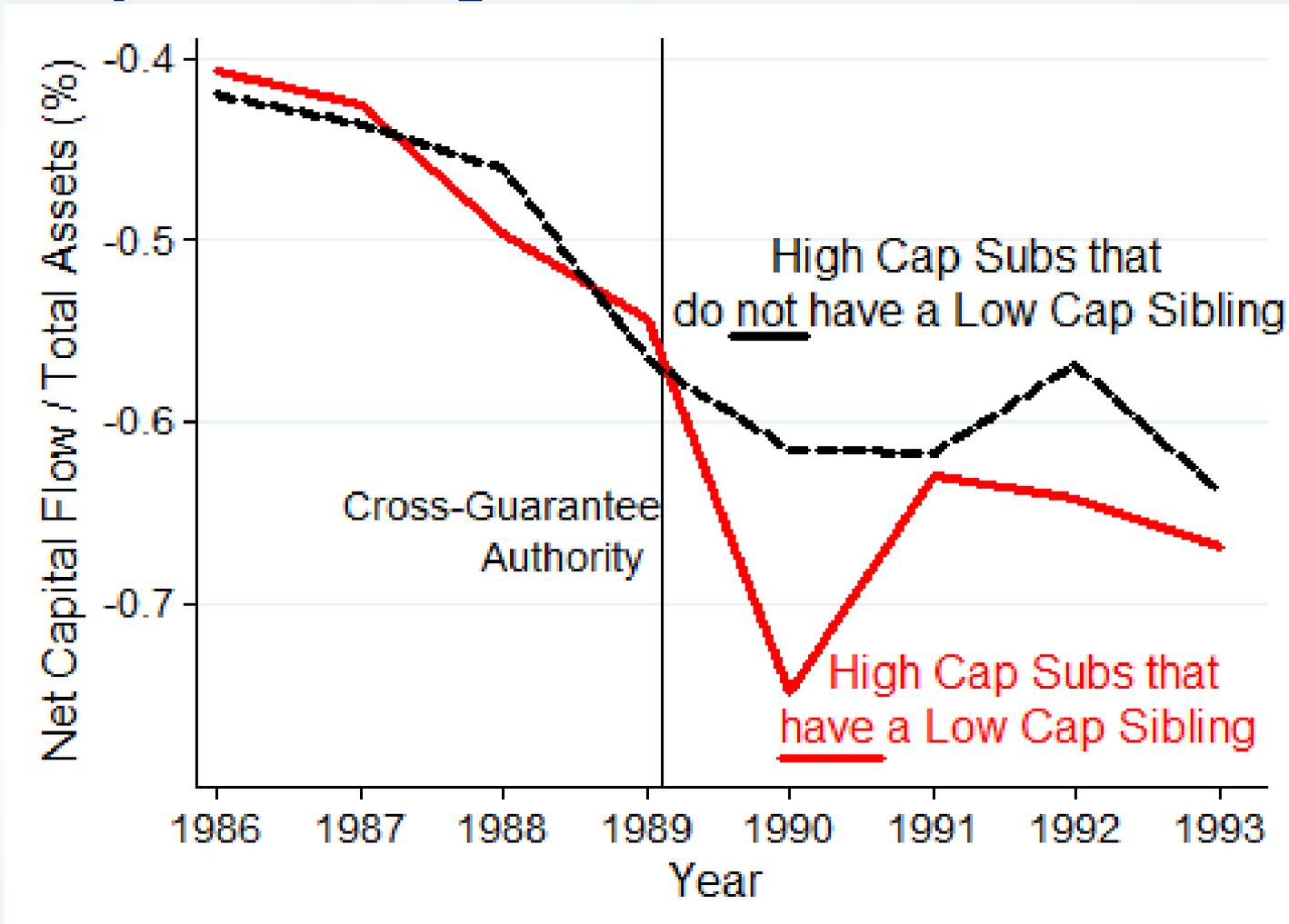
Low Capital Subsidiaries



Recapitalization Speed of Low Capital Subs

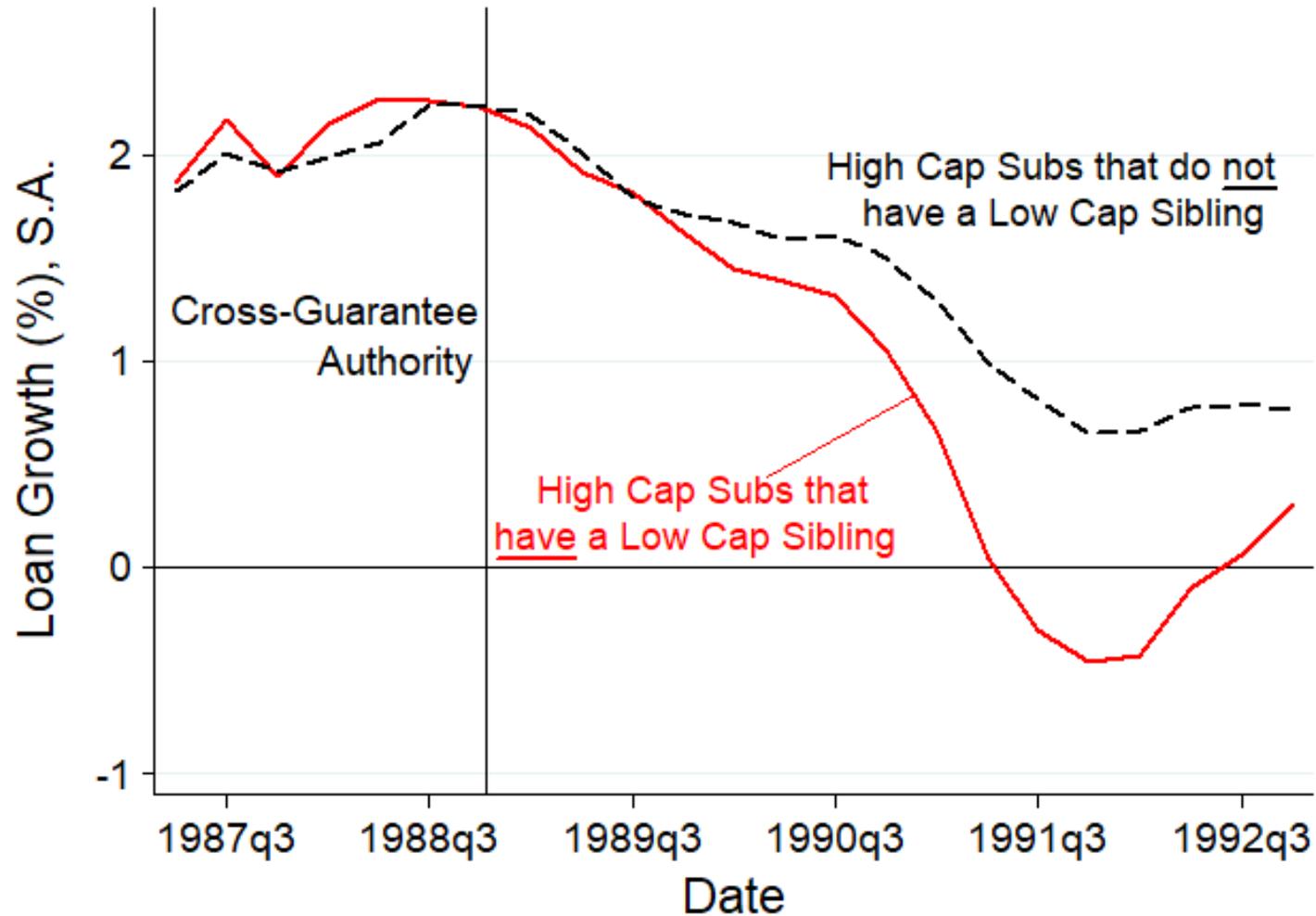


High Capital Siblings

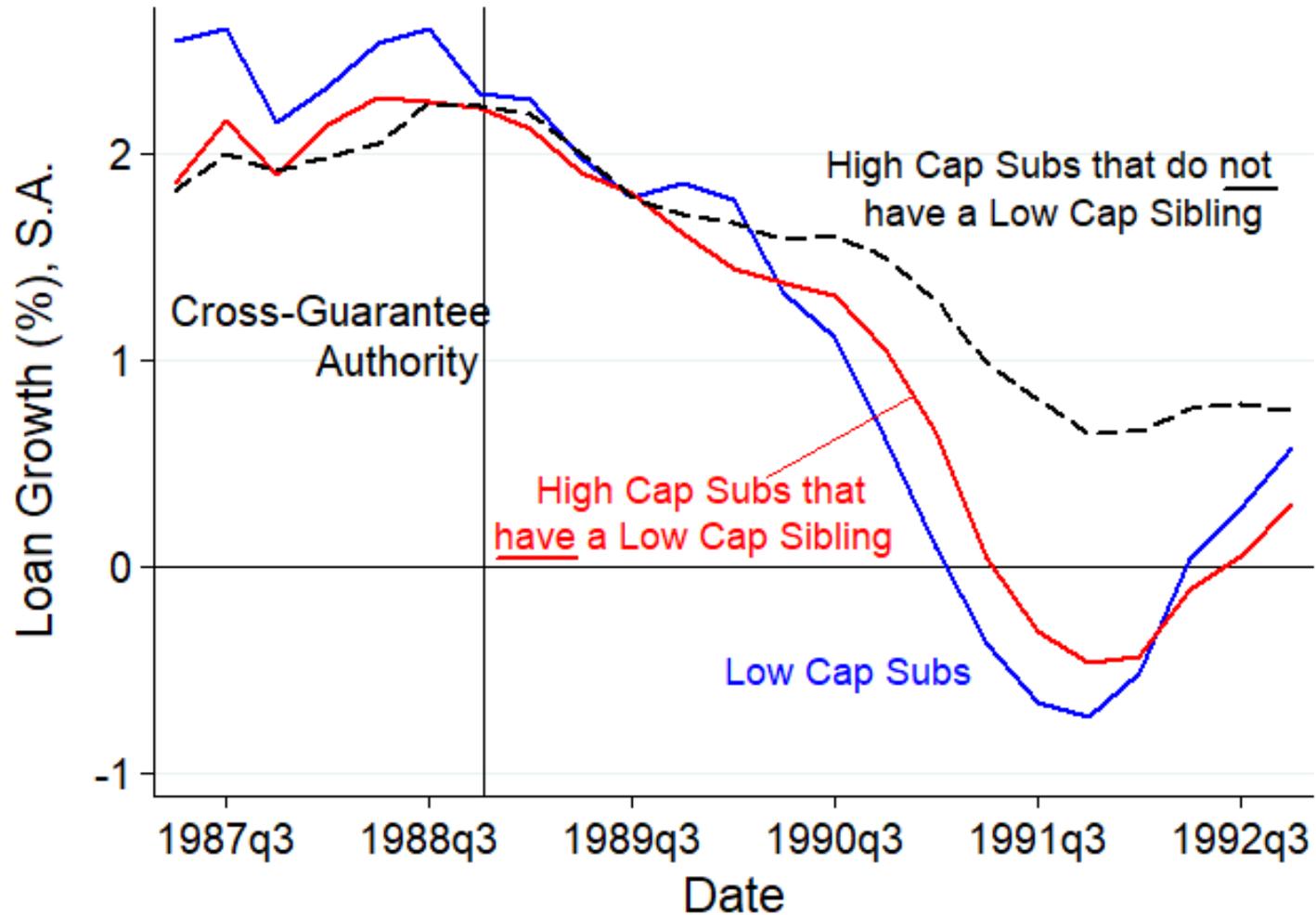


SPIILLOVER EFFECTS ON SIBLING LENDING

High Capital Subs



Consolidated Lending Effects



Conclusion

- ❖ **To eliminate the exploitation of the deposit insurance scheme,** what if regulators strengthen the enforcement of capital requirements at a weak subsidiary?
 - I find:

Conclusion

- ❖ **To eliminate the exploitation of the deposit insurance scheme,** what if regulators strengthen the enforcement of capital requirements at a weak subsidiary?
 - I find:
 - » Parents choose not to issue (high cost of external equity)

Conclusion

- ❖ **To eliminate the exploitation of the deposit insurance scheme,** what if regulators strengthen the enforcement of capital requirements at a weak subsidiary?
 - I find:
 - » Parents choose not to issue (high cost of external equity)
 - » This reluctance to issue results in a spillover effect on the strong sibling's lending via internal capital markets

Conclusion

- ❖ **To eliminate the exploitation of the deposit insurance scheme,** what if regulators strengthen the enforcement of capital requirements at a weak subsidiary?
 - I find:
 - » Parents choose not to issue (high cost of external equity)
 - » This reluctance to issue results in a spillover effect on the strong sibling's lending via internal capital markets
- ❖ **G-SIFI application: International policy coordination important**
Unilateral policy actions to protect the national deposit insurance fund can transmit negative spillover effects to the credit growth of siblings in foreign jurisdictions.

THANK YOU FOR YOUR ATTENTION

Arun Gupta

Federal Reserve Board
Washington DC, USA

E-mail: arun.gupta@frb.gov

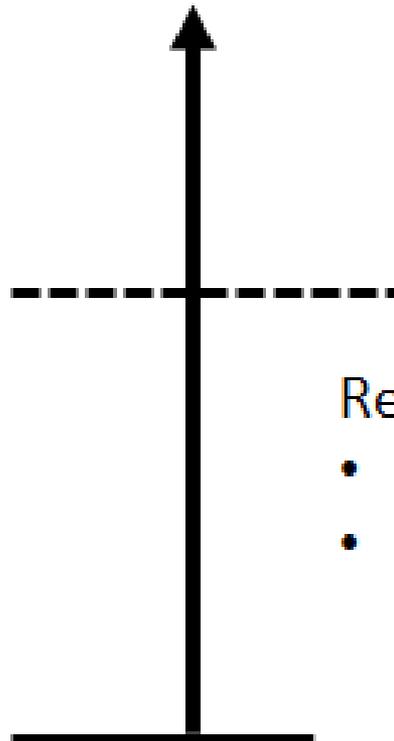
APPENDIX

Subsidiary Capital Requirements

Subsidiary
Capital Ratio

Capital
Requirement

5.5%



Regulatory Penalties:

- Fines
- Capital Restoration Plan

Subsidiary Capital Requirements

Subsidiary
Capital Ratio

Capital
Requirement

5.5%

Regulator can
revoke charter
at its discretion

Regulatory Penalties:

- Fines
- Capital Restoration Plan

Subsidiary Capital Requirements

Subsidiary
Capital Ratio

Capital
Requirement

5.5%

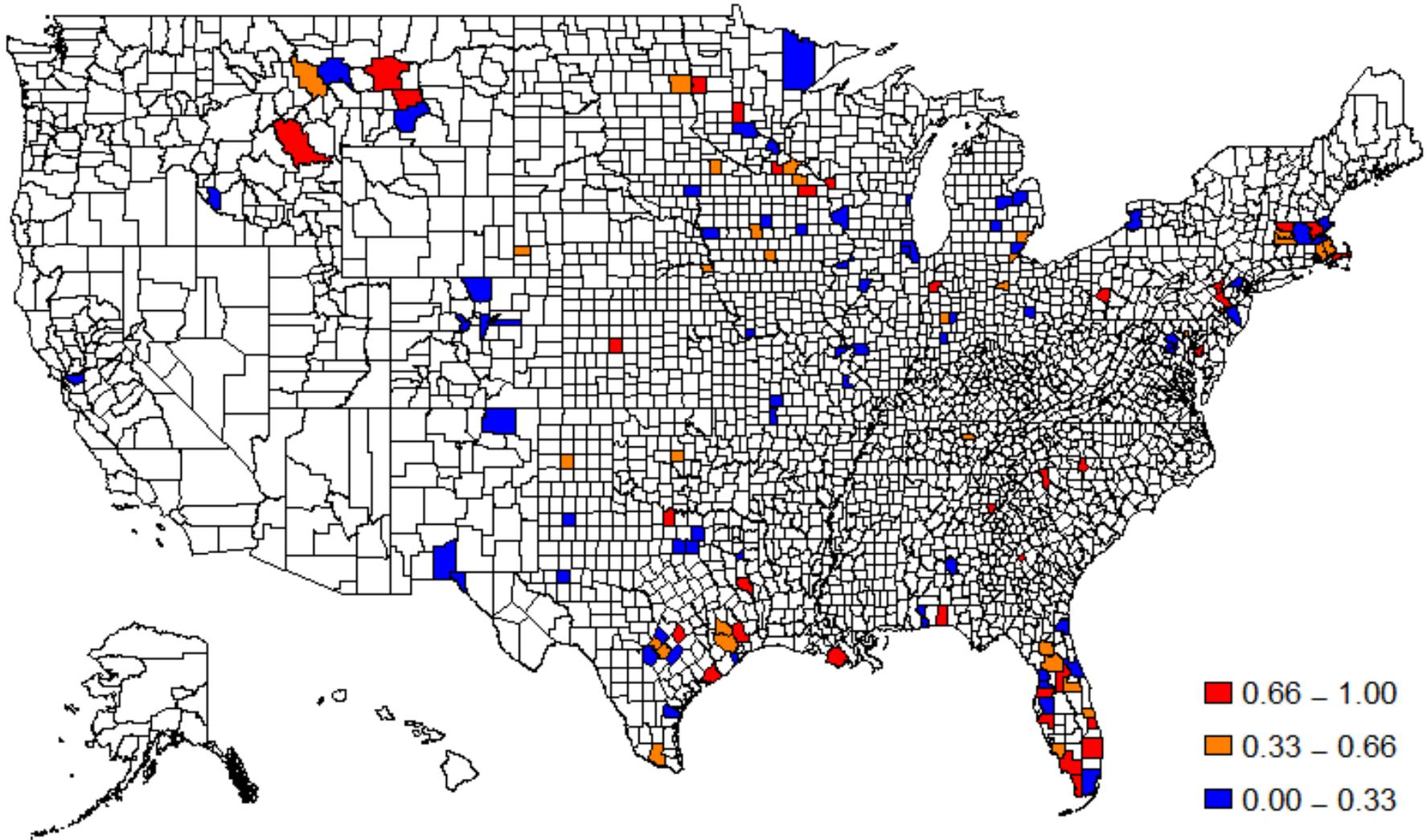
Regulator can
revoke charter
at its discretion

prob ↑

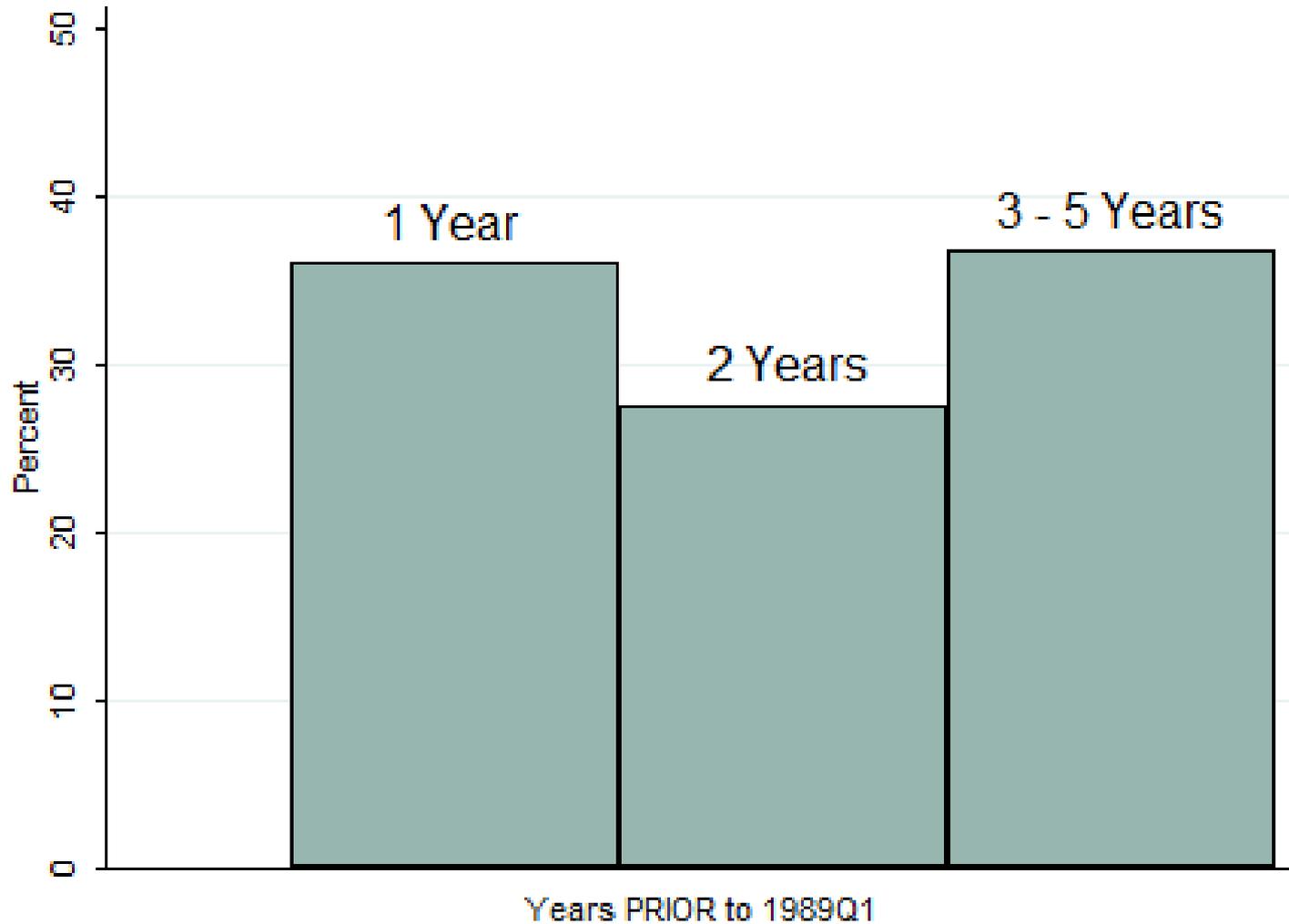
Regulatory Penalties:

- Fines
- Capital Restoration Plan

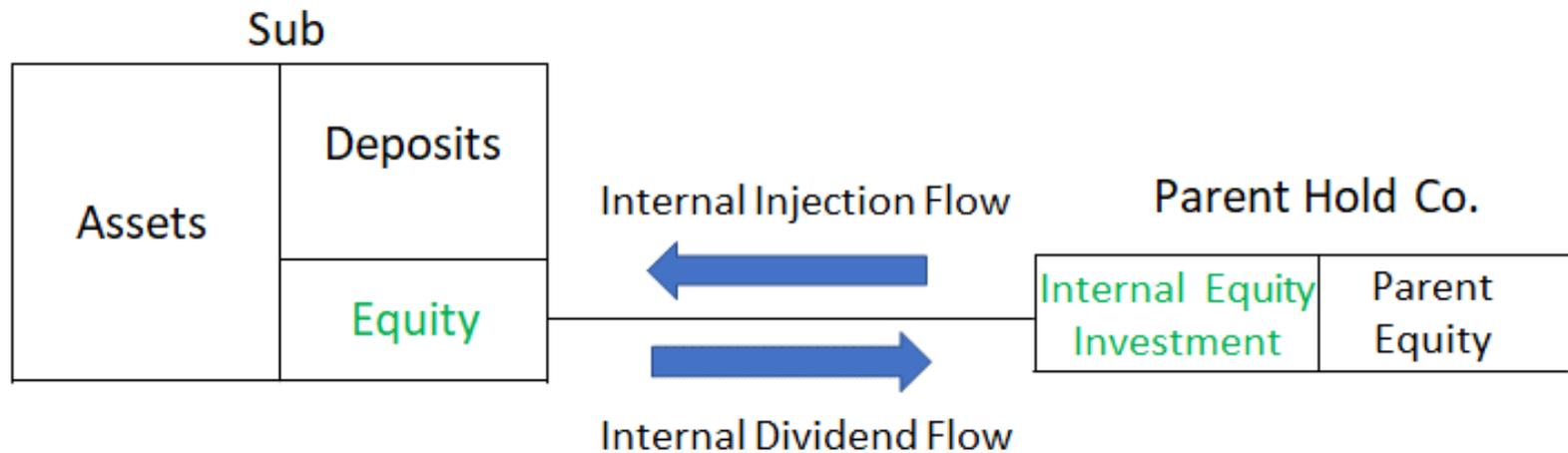
Locations of Low Capital Subs



Persistence of Undercapitalization



Internal Capital Transfer Definition



$$\frac{\text{Internal Injection Flow} - \text{Internal Dividend Flow}}{\text{Sub Assets}}$$