Breaking the Sovereign-Bank Diabolic Loop: A Case for ESBies

by

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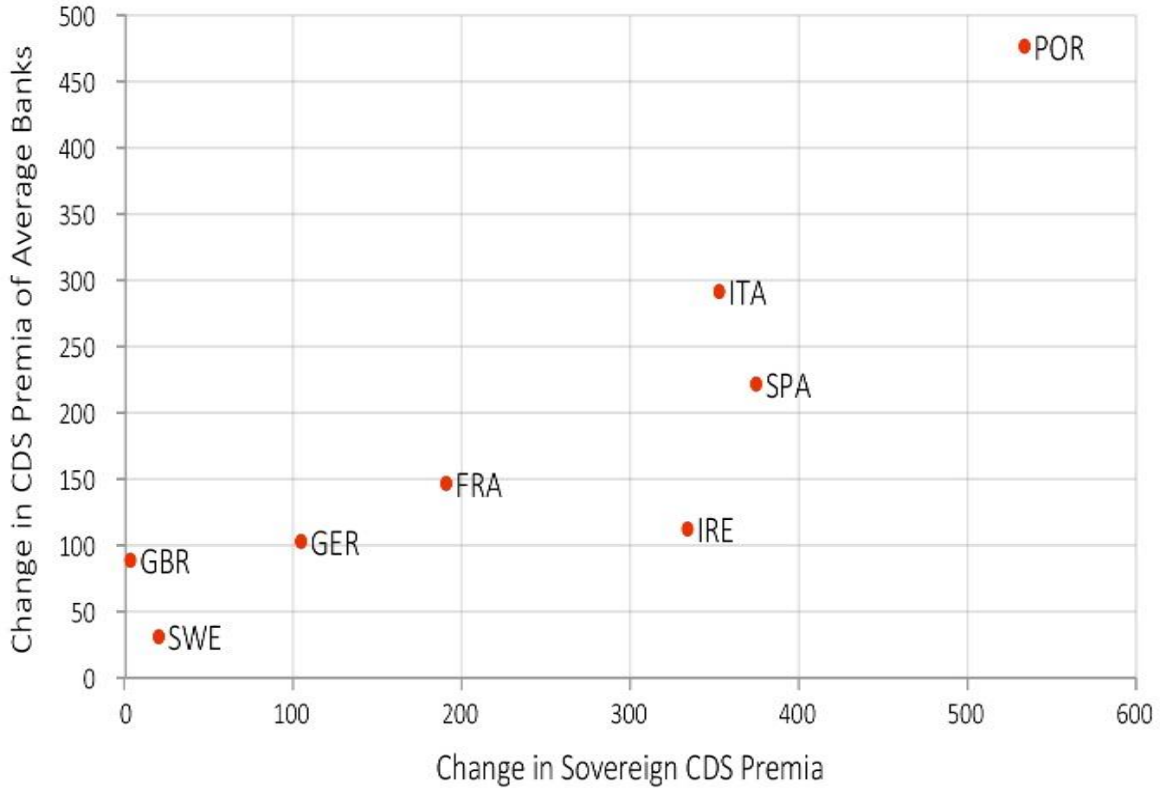
"Euro-nomics Group"

Diabolic Loop

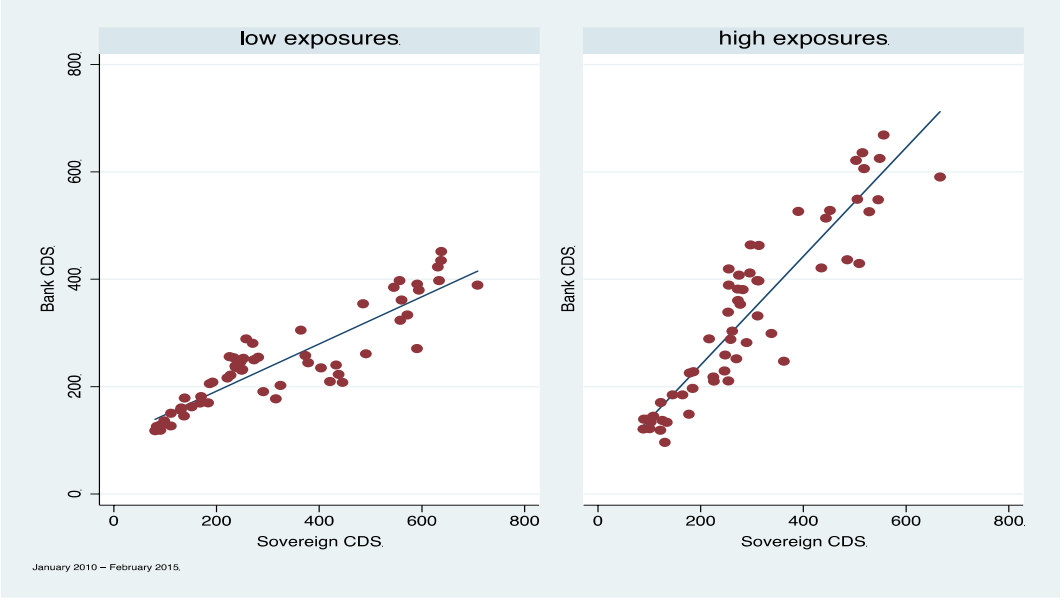
- Banks' CDS vs. Sovereign CDS

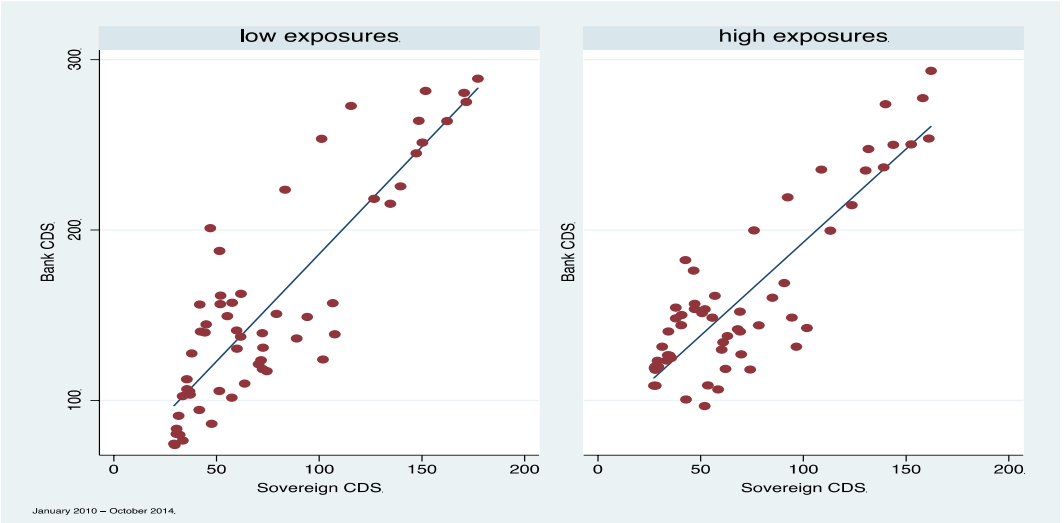


Diabolic Loop: Banks' CDS vs. Sovereign CDS

- Vulnerable countries
- Non-vulnerable countries

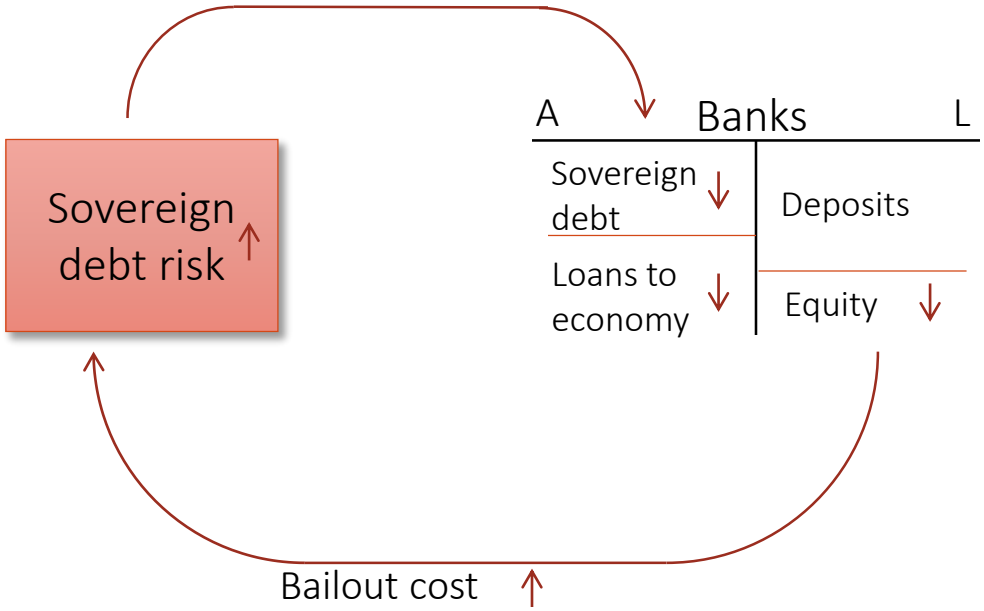
Banks with





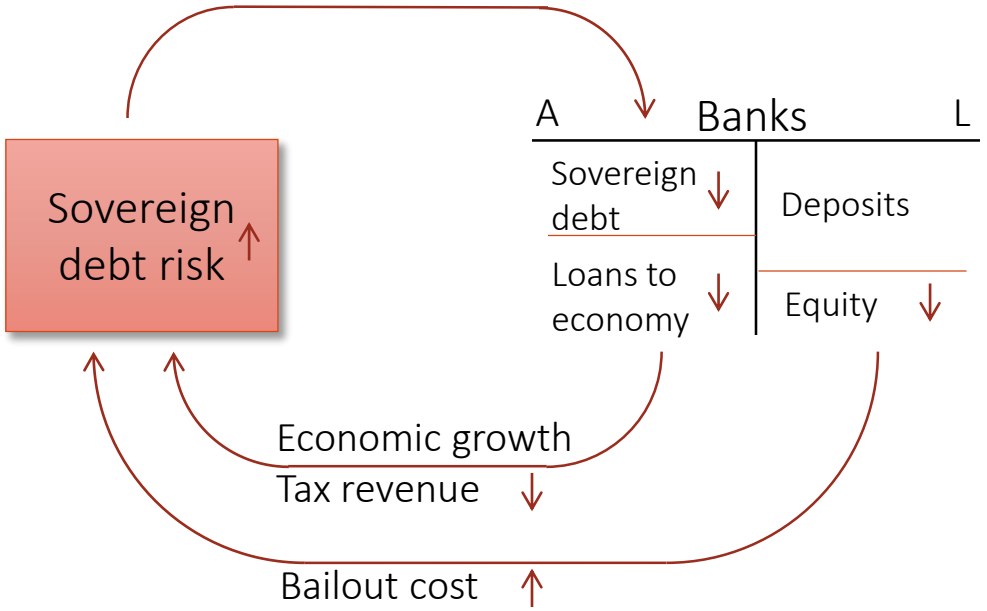
Source: Altavilla, Pagano, Simonelli (2015)

Bailout Diabolic Loop



Credit Diabolic Loop

- Less lending to real economy



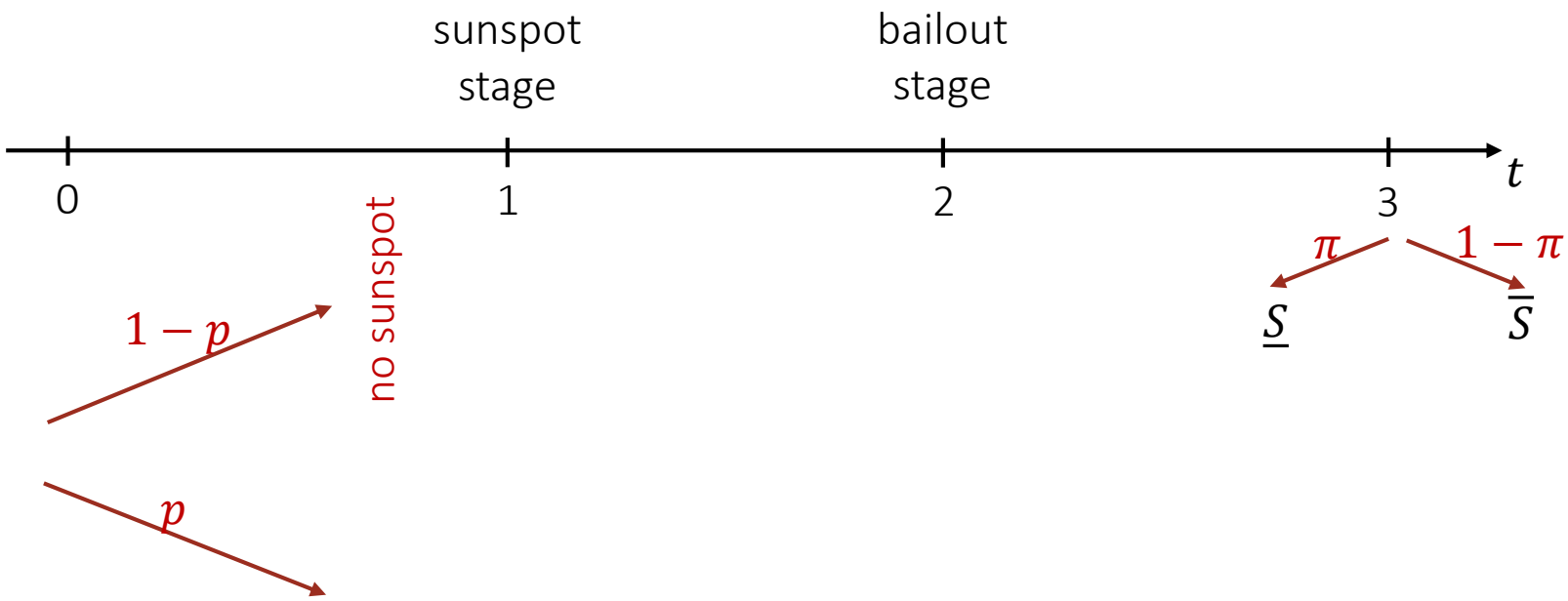
- GDP and tax revenue declines by $\tau\psi L_0$

Roadmap

- Diabolic Loop: Stylized Facts

- Single country case
  - Model of Diabolic Loop
  - Tranching only
- Multiple country case
  - Pooling
  - Pooling and Tranching -> ESBies
- Flight to Safety

Model of Diabolic Loop



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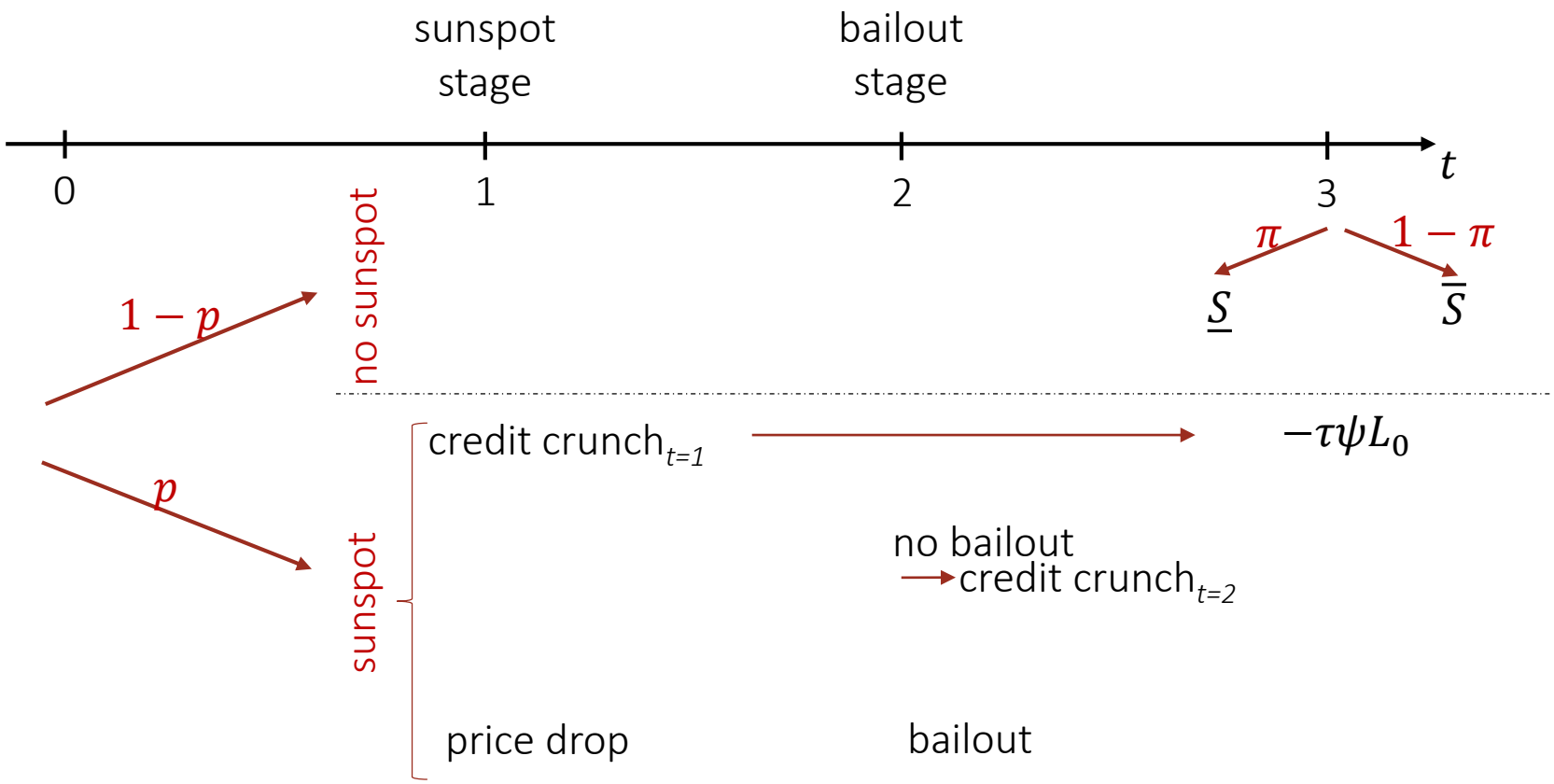

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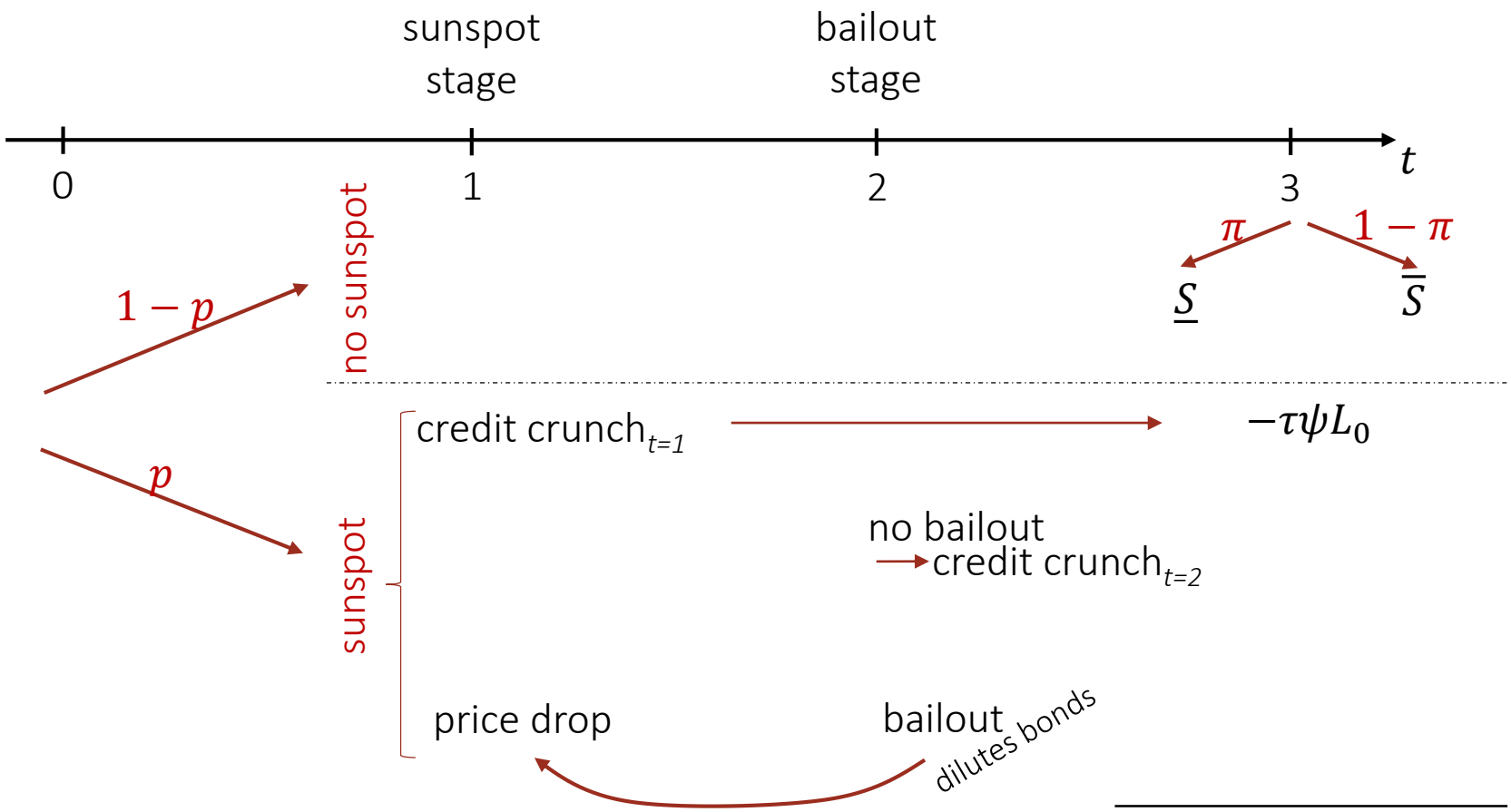

Time-inconsistency problem

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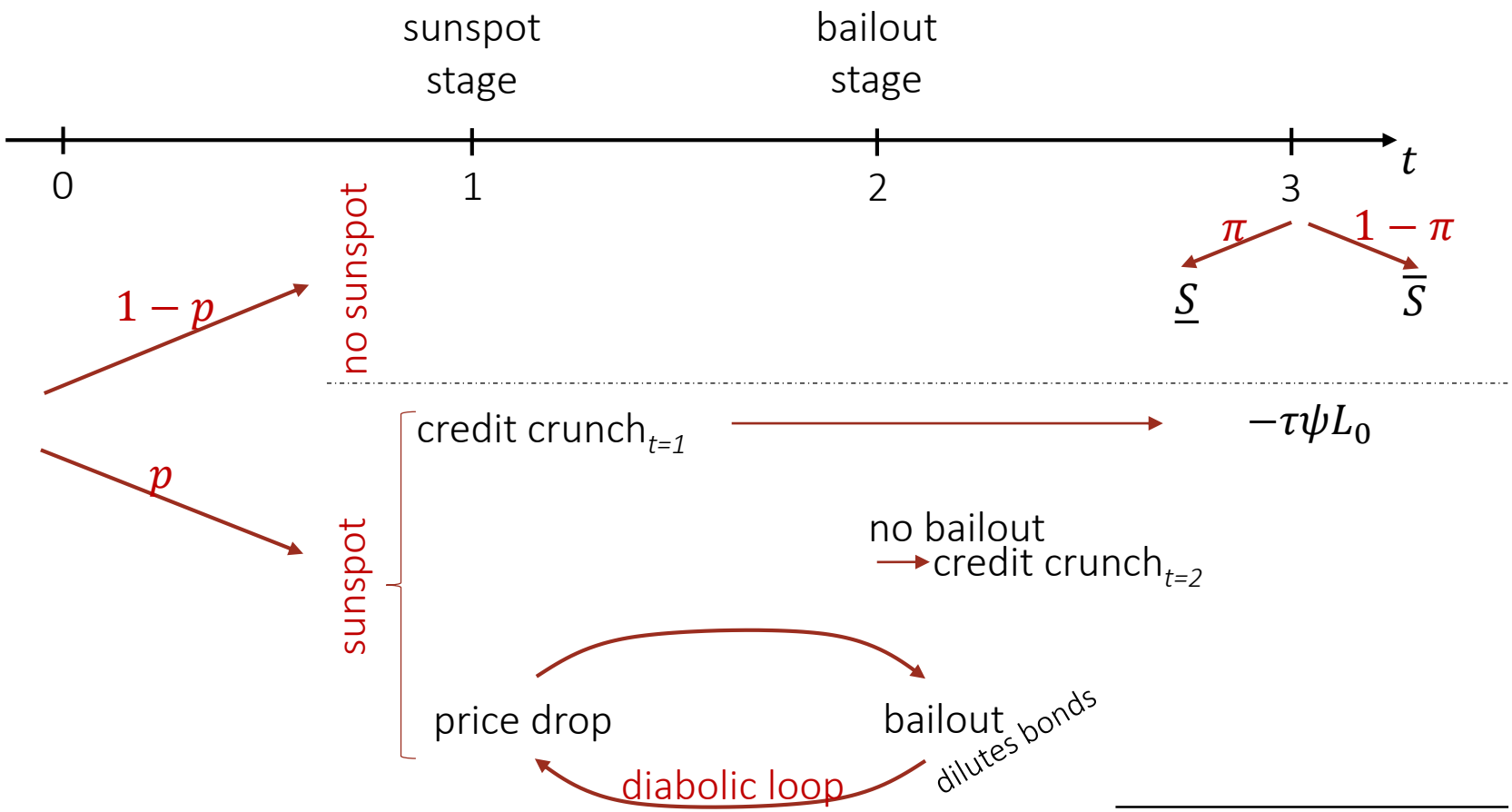

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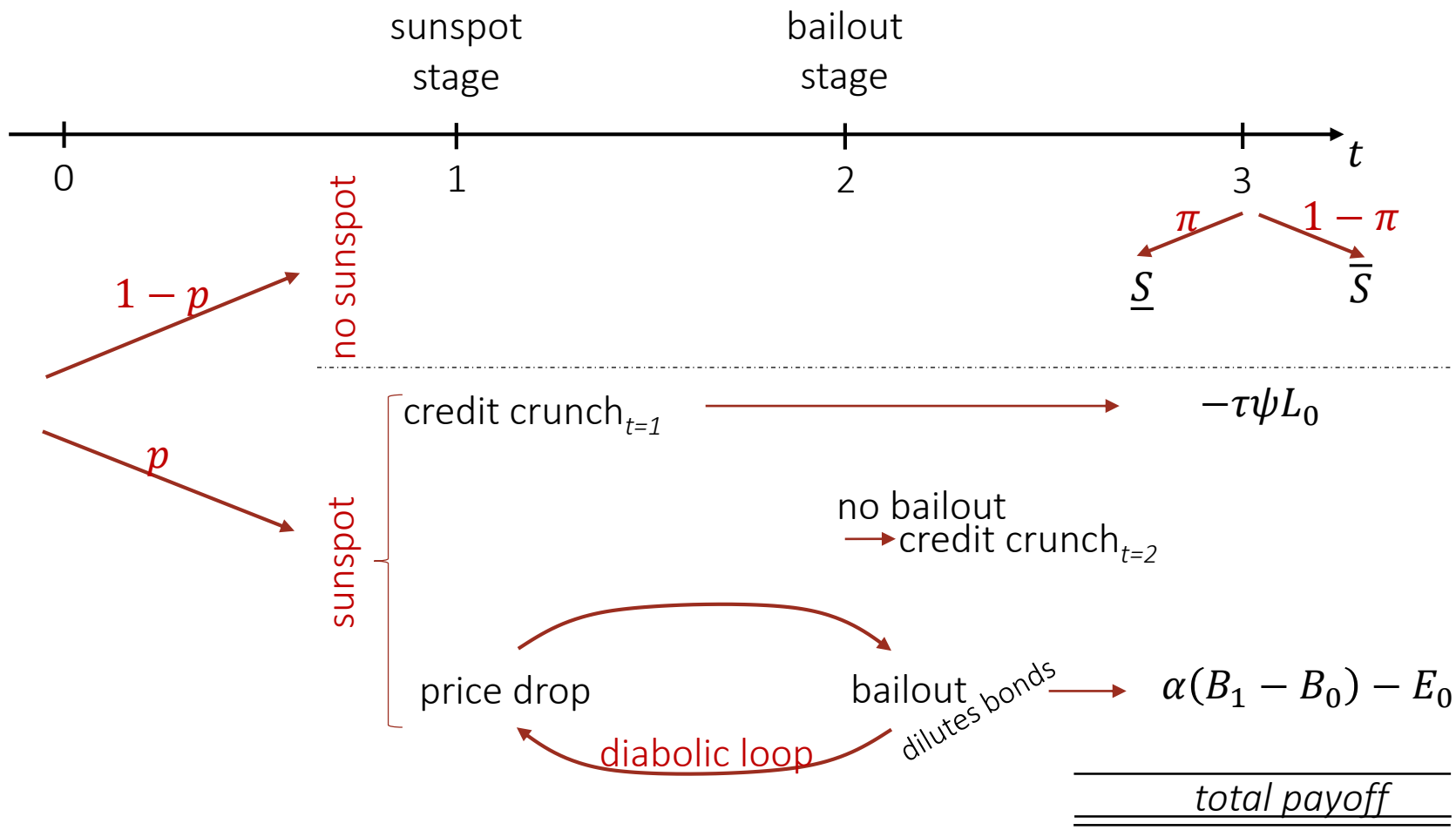

Time-inconsistency problem

Single Country: No Tranching

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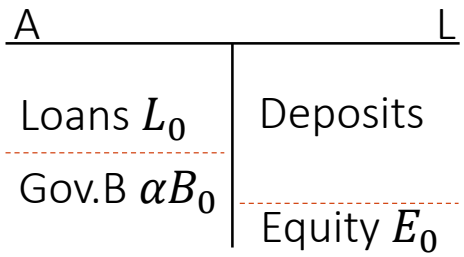

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A	L
Loans L_0	Deposits
Gov.B αB_0	Equity E_0

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  - At $t = 1$ Bond price drop $\underbrace{-\alpha(B_1 - B_0)}_{loss} > E_0$ ⇒ banks become insolvent

$$B_0 = \underline{S} - \pi p C$$

Endogenous bailout cost =
$=\tau\psi L_0 - [\alpha(B_1 - B_0) - E_0]$

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  - Maximum sovereign holdings of banks to avoid diabolic loop:

$$\frac{E_0}{\alpha \underline{S}} \geq (1-p)\pi \frac{\tau\psi L_0}{\underline{S}}$$

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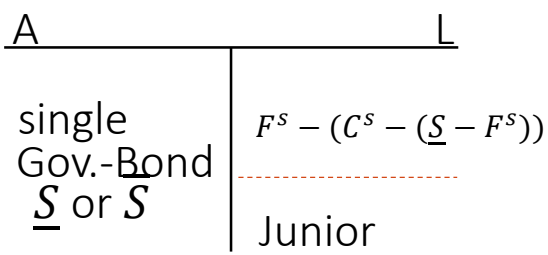
  Face value of senior bond = tranching point



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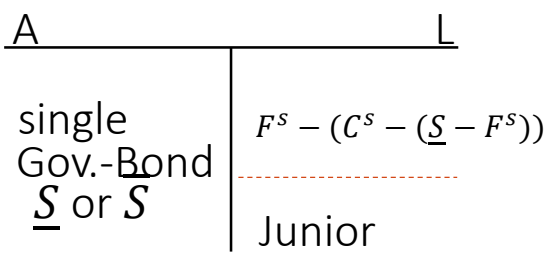

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Single Country: Tranching

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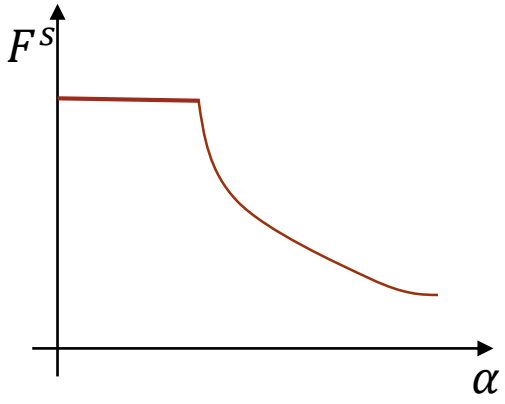
A	L
single Gov.-Bond $\underline{S}$ or S	$F^s - (C^s - (\underline{S} - F^s))$
	Junior



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  - Maximum amount of safe assets $\alpha^{s*} = 1, F^{s*} = \ldots$
    - Larger than without tranching

Two Countries: Only Pooling

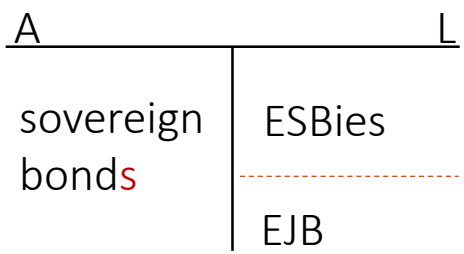
- 2 countries
  - Currency union: sovereign bonds are “subsovereign”
  - Same size
  - Realization of $\underline{S}$ vs. $\overline{S}$ is i.i.d. with same probability π

- Banks in each country hold fraction α^p of pooled asset
  - Hold indirectly fraction $\frac{1}{2}\alpha^p$ of each country’s government bond

- Proposition 3:
  - 50-50 pooling has no advantage!
  - Perfect correlation
    - Banks in both countries are identical and are either bailed out or not (by both countries)
    - Risk spreading vs. risk sharing

Two Countries: Pooling & Tranching

- ESBies = European Safe Bond



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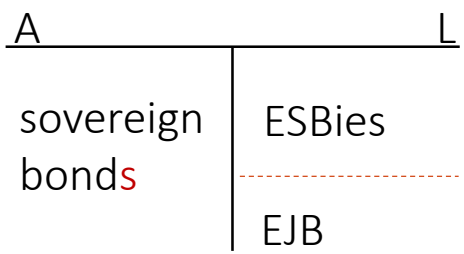

- Proposition 4
  - For a given $F^E = F^s, \alpha^E = \alpha^s$, ESBies lower capital requirements
  - ESBies generate larges amount of safe assets
  - Even Junior bond (EJB) is risk-free (in equilibrium)

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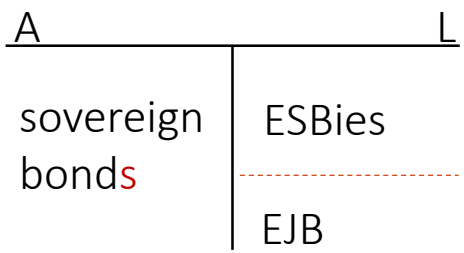

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  - ESBies generate larges amount of safe assets
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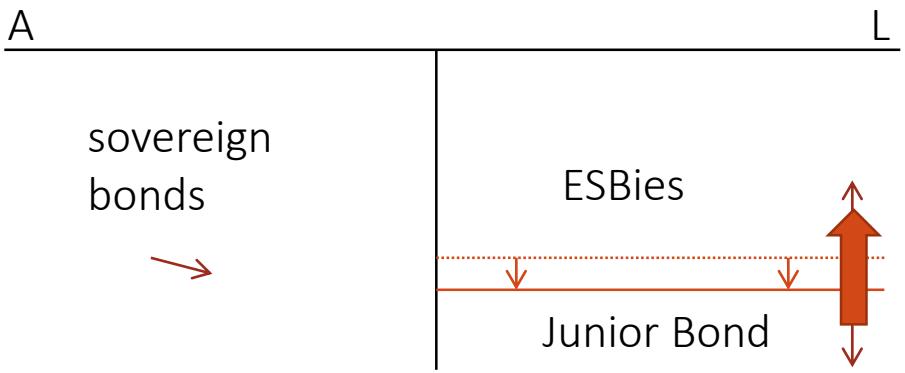
- Intuition:
  - Push (off-equilibrium) losses to junior bond holders
  - Tranching is more powerful after pooling

	$\underline{S}^A$	$\overline{S}^A$
$\underline{S}^B$	π^2 ESBies incur losses	$\pi(1-\pi)$
$\overline{S}^B$	$\pi(1-\pi)$	$(1-\pi)^2$

Flight to safety



Flight to safety asset is endogenous (coordination problem)

- Today: asymmetric shifts across borders
  - Value of German debt decreases
    - German CDS spread rises, but yield on bund drops (flight to quality)
  - Value of Italian/Spanish/Greek… sovereign debt declines

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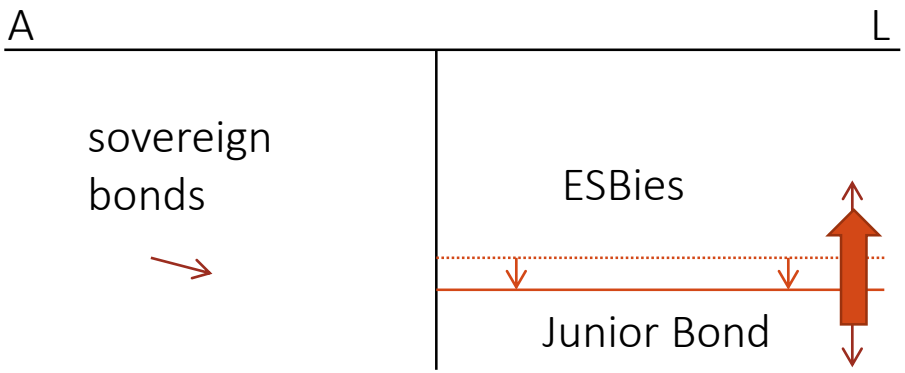

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- With ESBies: Negative co-movement across tranches
  - Value of ESBies expands – due to flight to quality
  - Value of Junior bond shrinks – due to increased risk
  - Asset side is more stable

Conclusion

- Diabolic loop
  - Bank bailout dilutes bond holders, which in turn held by banks
- Tranching without pooling (single country)
  - Bank capital requirement reduced due to protection from junior bond
- Pooling across sovereigns
  - No advantage – same bank capital requirements
  - Perfect correlation across countries
    - (banks default in both countries)
- ESBies pooling & tranching
  - Now pooling has bite
  - Now capital requirements are lower than in single tranching case
  - More safe assets for economy
  - Junior bond is also risk-free!