



Edgeworth Lecture 2016

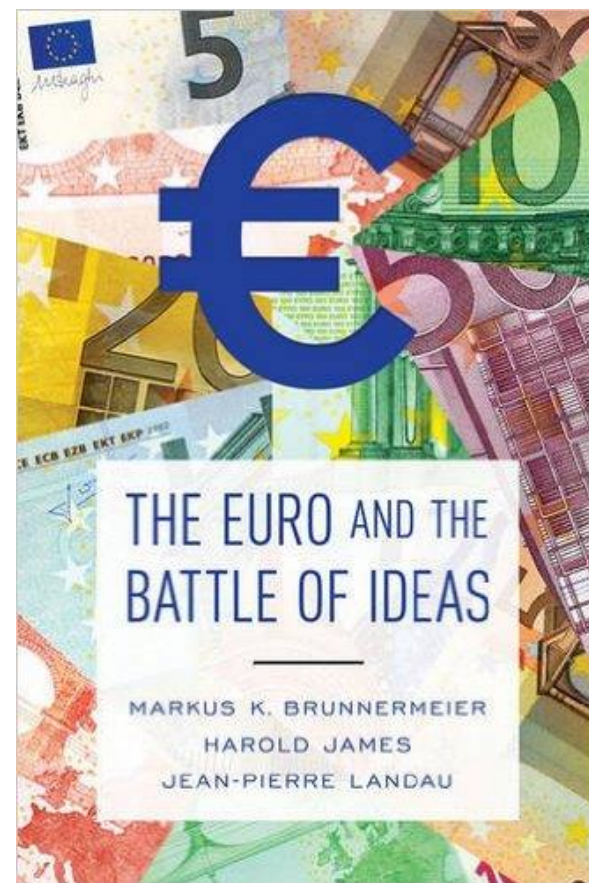
Markus K. Brunnermeier

Galeway, Ireland, May 6th, 2016

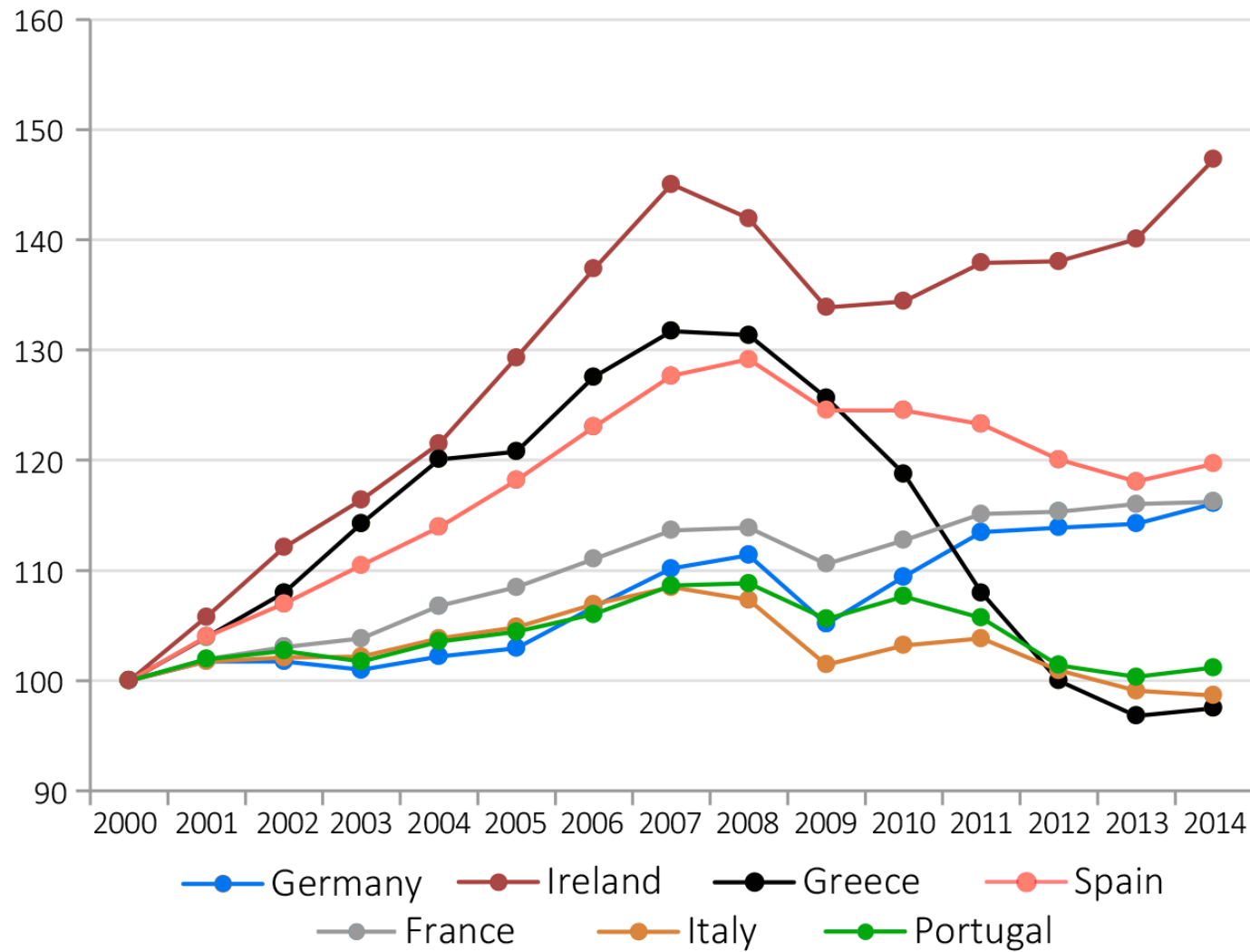


|| ... based on

- Euro and the Battle of Ideas
 - With Harold James & Jean-Pierre Landau
- The I Theory of Money
 - With Yuliy Sannikov
- Financial Dominance
 - Baffi Lecture 2015
- Safe Assets
 - With Valentin Haddad
- Euronomics Group



|| GDP accumulated since Euro



Source: EuroStat

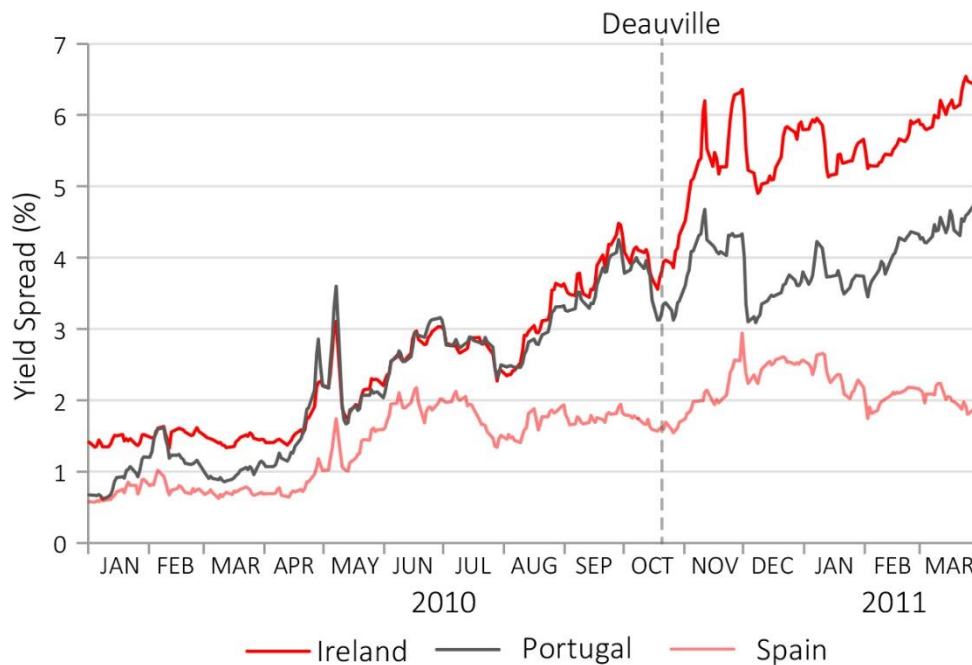
Overview

- Power shift – watershed moments
 - Rationale for focus on Germany and France
- Cultures Clash
- Different economic philosophies
 - Ideas versus interest
 - Shifts and reversals are possible
- Maastricht's Ghost: Monetary and fiscal stability
- Maastricht's Stepchild: Financial stability
 - Paradox of Prudence
 - Redistributive Monetary Policy
 - Diabolic loop, flight to safety, ESBies

Watershed Moments/Turning Points

- 2010, May: EFSF, IMF involvement
- 2010, Oct: Deauville PSI: contagion

2 Power shifts



- 2012: Draghi's "Whatever it takes" Speech in London
- 2013: Cyprus Bail-in

German-French differences

- Interests are interpreted through the **lens of ideas** $\approx$ models



||| Difference in eco-philosophies: Historical roots

■ Walter Bagehot (1869)

- “In that case, there would be one Teutonic money and one Latin money; the latter mostly confined to the West of Europe, and the former circulating through the world. Such a monetary state would be an immense improvement on the present. Yearly one nation after another would drop into the union which best suited it; and looking to the commercial activity of the Teutonic races, and the comparative torpor of the Latin races, no doubt the Teutonic money would be most frequently preferred.”

|| Ghost of Maastricht “Rhine Divide”

“French”

1. Discretion

2. Solidarity

- Fiscal union

3. Liquidity/contagion

4. Keynesian Stimulus



“German”

Rules

Liability

No-bailout clause/rule

Solvency

Austerity/Reform



“Rhine-divide”

||| Unchangeable or fickle?

- Historic breaks and reversals in 1945
 - Germany moves from cameralism and state tradition to Ordo-liberalism
 - France moves from laissez faire to planisme
- Alexis de Tocqueville:
 - “a people so **unchangeable in its leading features** that it may be recognized by portraits drawn two or three thousand years ago, and yet so **fickle in its daily opinions and tastes** that it becomes at last a mystery to itself.” *The Ancien Regime and the French Revolution*

||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

- flexible crisis management

“German”

Rules

“ad hocery”

vs.

||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

“German”

1. Discretion

vs.

Rules

- flexible crisis management

“ad hocery”

- Problem with flexibility: Time-inconsistency

ex-post



ex-ante

efficiency

||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

- flexible crisis management

“German”

Rules

“ad hocery”

vs.

- Problem with flexibility: Time-inconsistency

ex-post



ex-ante

efficiency

- Price stability
- Financial stability
- Fiscal sustainability

promise not to inflate in the future

*promise only to provide liquidity
but not to bail-out (redistribute)
insolvent institutions*

*promise not to default on debt
to spend in recessions (now)
but consolidate (later)*

||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

“German”

1. Discretion

vs.

Rules

- flexible crisis management

“ad hocery”

- Problem with flexibility: Time-inconsistency
- Rules should fix commitment problems, but can't deal with unforeseen contingencies
 - Aristotle: Nicomachean Ethic V
 - “When the law speaks universally, and a case arises on it which is not covered by the universal statement, then it is right, where the legislator fails us and has erred by oversimplicity, to correct the omission-to say what the legislator himself would have said had he been present, and would have put into his law if he had known.”
- Delegation: Institutional Design

||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

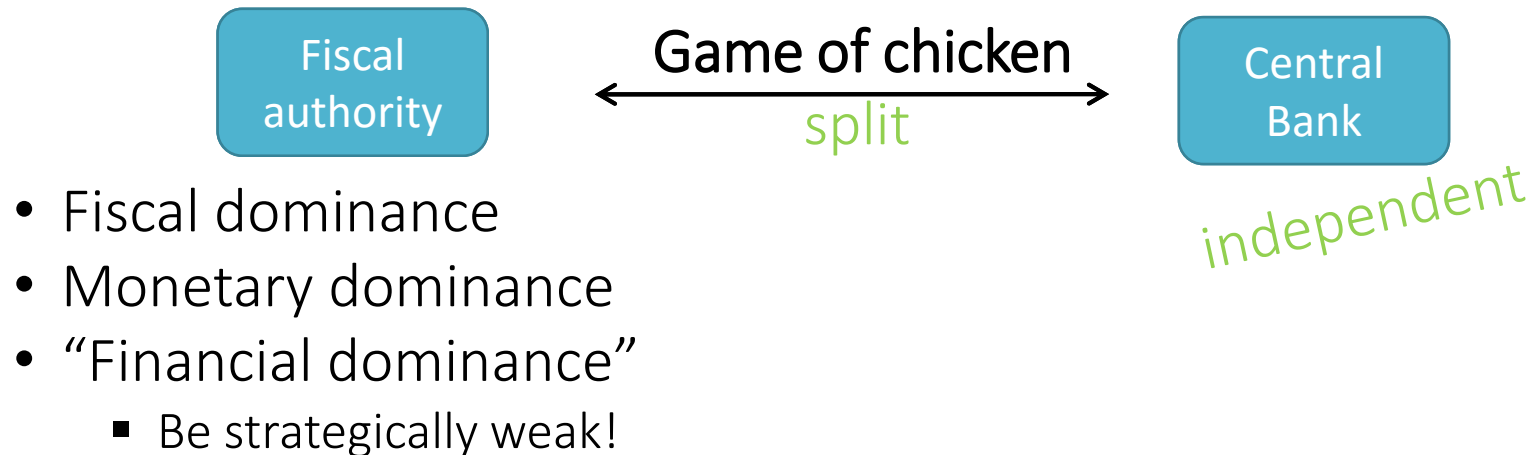
“French”

“German”

1. Discretion

vs. Rules

- Time-inconsistency problem btw
ex-post ex-ante efficiency
- Rules, but unforeseen contingencies
- Institutional Design (mechanism design)



Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

“German”

1. Discretion

vs. Rules

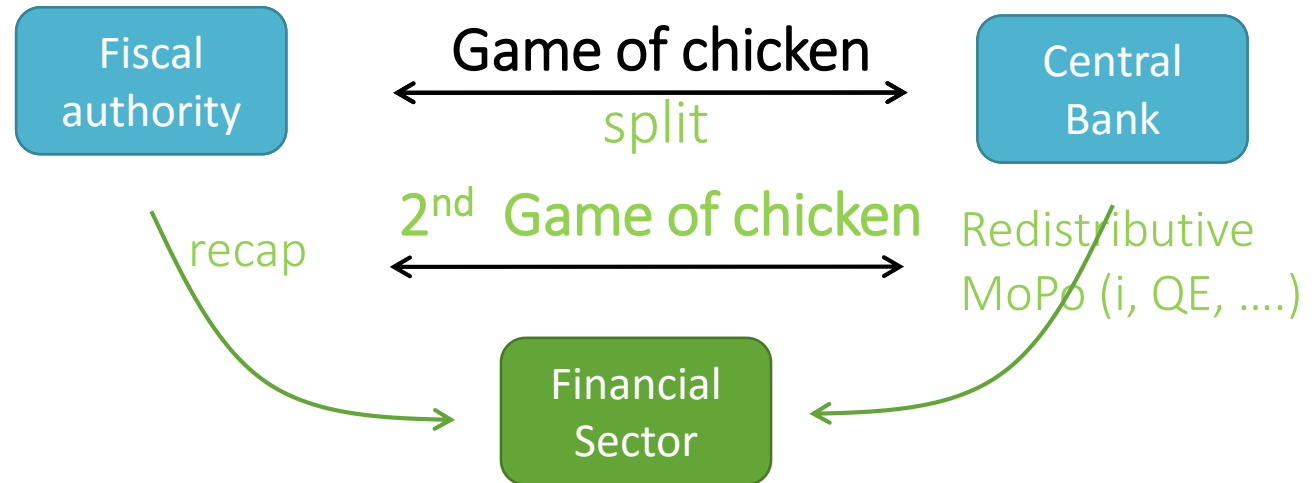
- Time-inconsistency problem btw

ex-ante

ex-post

efficiency

- Institutional Design (mechanism design)



||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

2. Solidarity

- Fiscal union
- Illusion of default free bonds

“German”

Rules

Liability

Deauville

No-bailout clause/rule

SDRM/insolvency procedures

Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

2. Solidarity

- Fiscal union
- Illusion of default free bonds

“German”

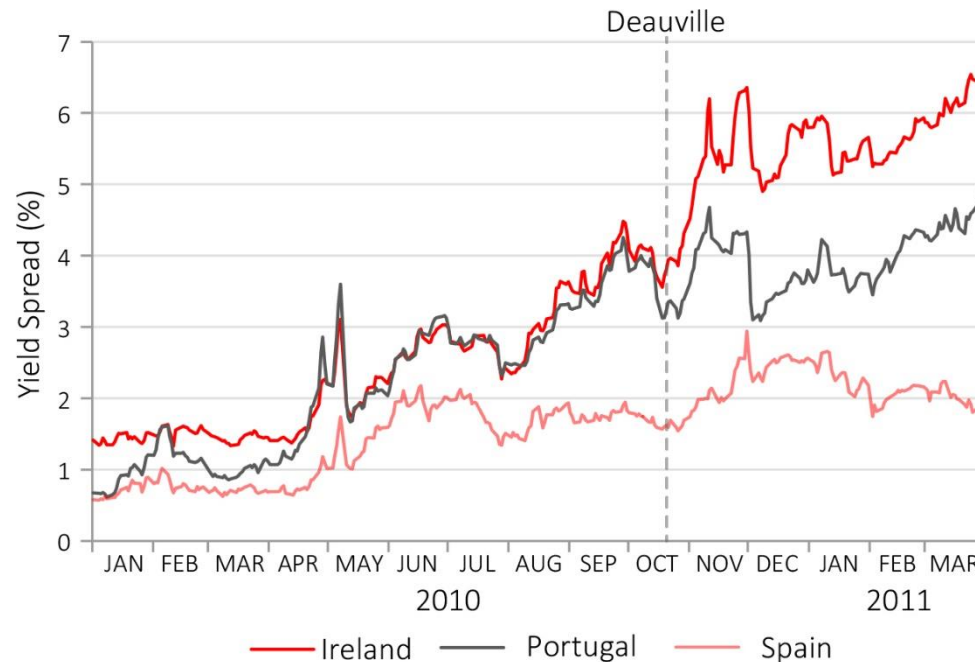
Rules

Liability

Deauville

No-bailout clause/rule

SDRM/insolvency procedure



Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

2. Solidarity

- Fiscal union
- Illusion of default free bonds
- Eurobonds with joint liability

“German”

Rules

Liability

No-bailout clause/rule
SDRM/insolvency procedure
ESBies without joint liability

||| Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

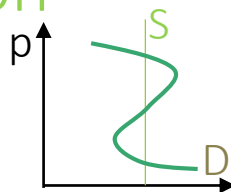
2. Solidarity

3. Liquidity/contagion

- multiple equilibria

“big bazooka”

Draghi speech



“German”

Rules

Liability

Solvency

$E[NPV] > 0$, at what discount rate?

Ghost of Maastricht “Rhine Divide”

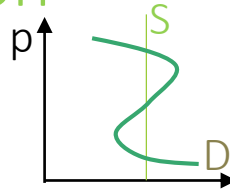
“Black-white” Organizing Principle

“French”

1. Discretion
2. Solidarity
3. Liquidity/contagion

- multiple equilibria
- “big bazooka”

Draghi speech



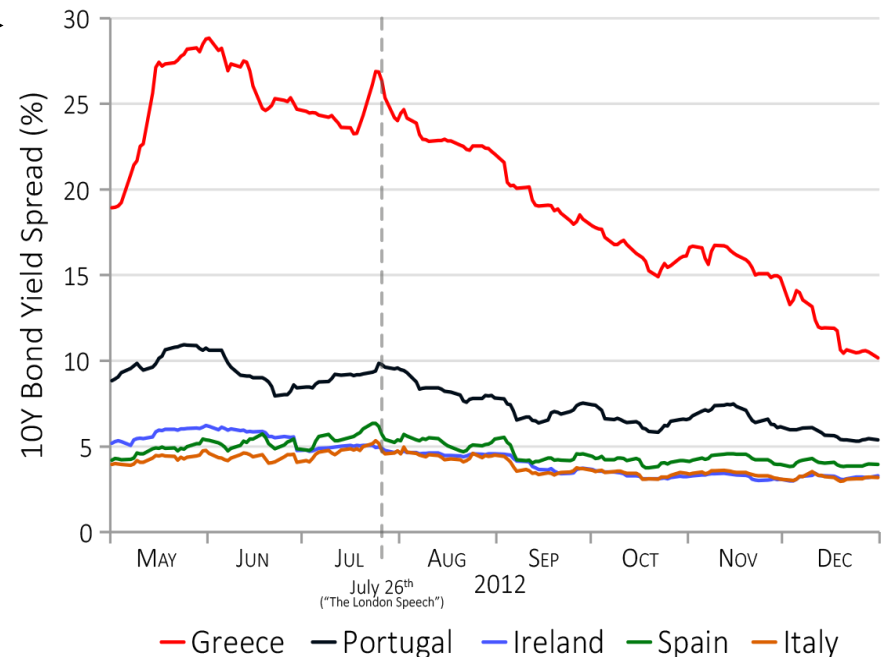
“German”

Rules

Liability

Solvency

$E[NPV] > 0$, at what discount rate?



Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion
2. Solidarity
3. Liquidity/contagion

- multiple equilibria
“big bazooka”

- amplification/spirals
 - $E[\text{NPV bailout}] > 0$
 - $E[\text{PV bailout} - \text{PV no bailout}] > 0$

contagion/systemic

Bail-out/LLRin

- Countries
- Financial Sector

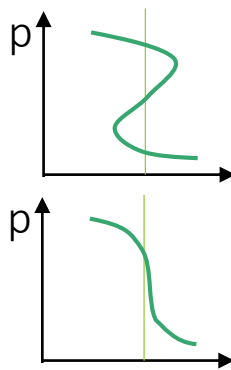
“German”

Rules

Liability

Solvency

$E[\text{NPV}] > 0$, at what discount rate?



Bail-in Cyprus

Ghost of Maastricht “Rhine Divide”

“Black-white” Organizing Principle

“French”

1. Discretion

2. Solidarity

- fiscal union

3. Liquidity/contagion

4. Keynesian Stimulus Demand

- Output gap
- Reforms in boom



“German”

Rules

Liability

No-bailout clause/rule

Solvency

Austerity/Reform Supply

unsustainable credit boom
Reforms in crisis (political economy)



“Rhine-divide”

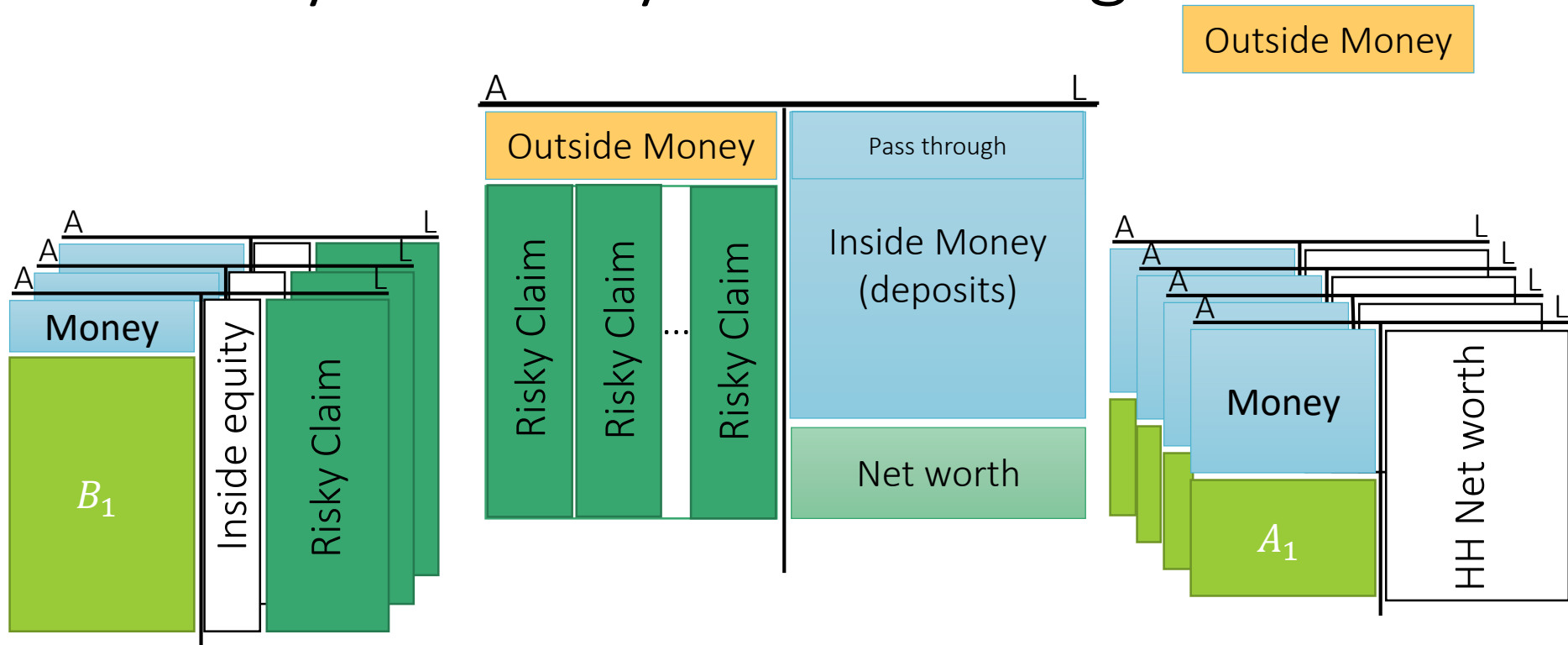
- 

Overview

- Power shift – watershed moments
 - Rationale for focus on Germany and France
- Cultures Clash
- Different economic philosophies
 - Ideas versus interest
 - Shifts are possible
- Maastricht's Ghost: Monetary and fiscal stability
- Maastricht's Stepchild: Financial stability
 - Paradox of Prudence
 - Redistributive Monetary Policy
 - Diabolic loop, flight to safety, ESBies

Need financial sector

I Theory: “Money and Banking”



■ Intermediaries

- Can hold outside equity & diversify within sector b
- Monitoring
- Create inside money
- Maturity/liquidity transformation

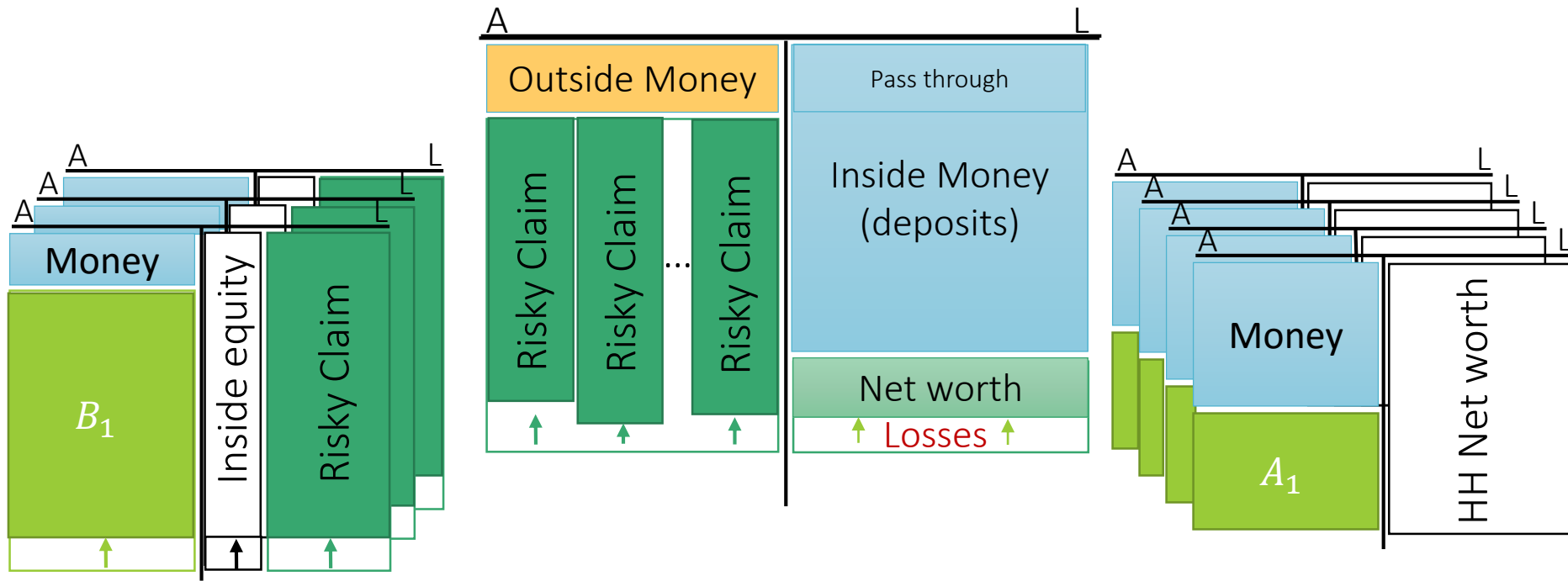
III I Theory: “Money and Banking”

- Money store of value (less transaction role, unit of account)
- Banking “diversifier”
 holds risky assets, issues inside money

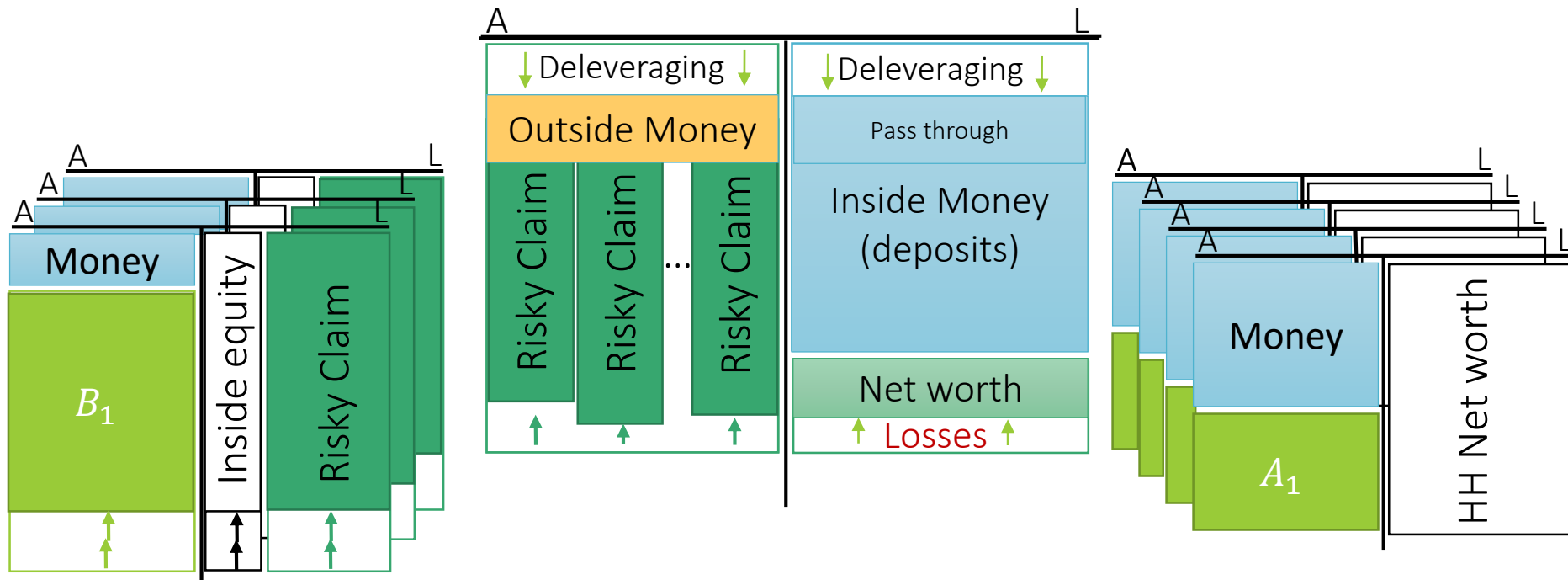
III I Theory: “Money and Banking”

- Money store of value
- Banking “diversifier”
 holds risky assets, issues inside money
- Amplification/endogenous risk dynamics
 - Value of capital declines due to **Liquidity spiral**
 - Fire-sales
 - Flight to safety
 - Value of money rises **Disinflation spiral** a la Fisher
 - Demand for money rises – less idiosyncratic risk is diversified
 - Supply for inside money declines – less creation by intermediaries
 - Endogenous money multiplier = $f(\text{capitalization of critical sector})$

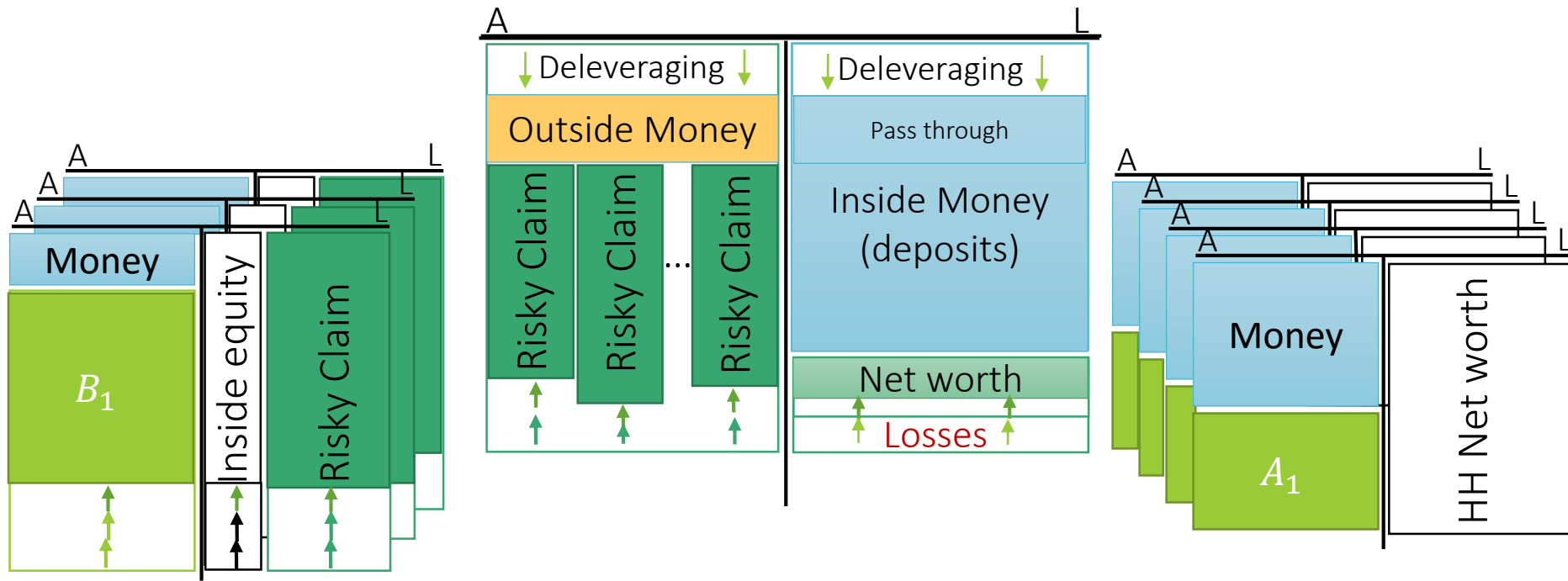
Shock impairs assets: 1st of 4 steps



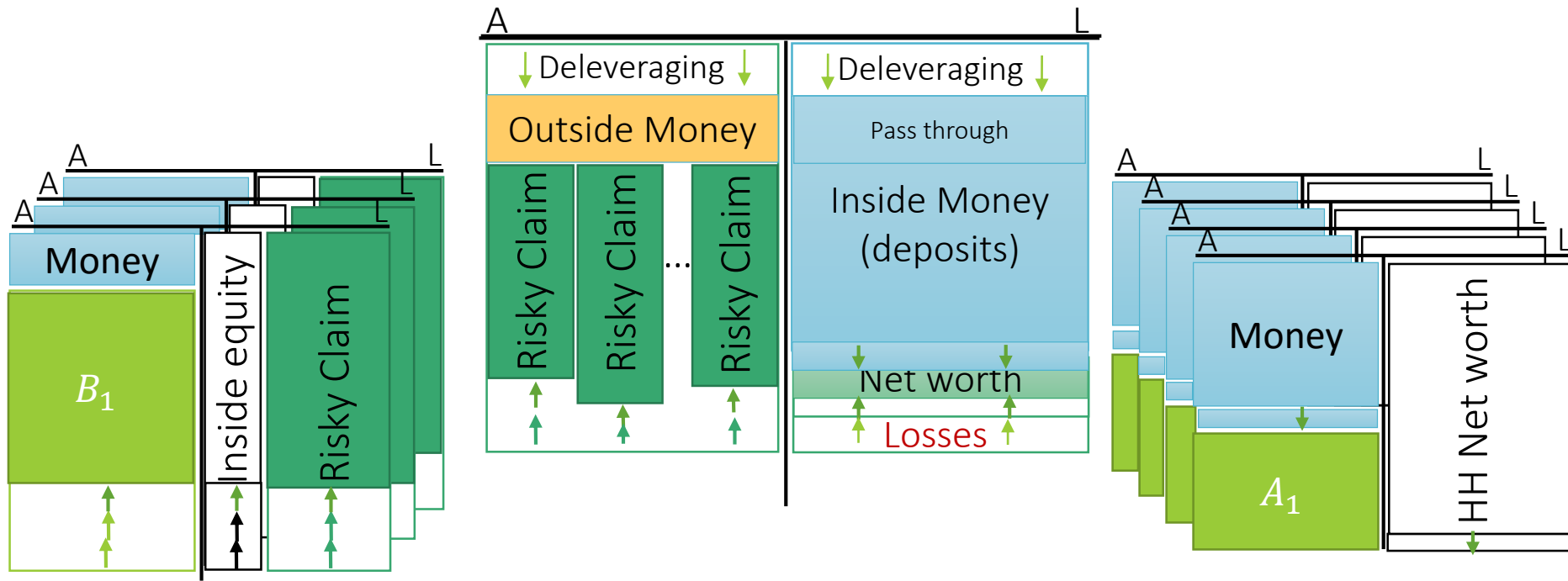
Shrink balance sheet: 2nd of 4 steps



Liquidity spiral: asset price drop: 3rd of 4



Disinflationary spiral: 4th of 4 steps



Paradox of Prudence

- Money store of value
- Banking “diversifier”
 holds risky assets, issues inside money
- Amplification/endogenous risk dynamics
 - Value of capital declines due to **Liquidity spiral**
 - Fire-sales
 - Flight to safety
 - Value of money rises **Disinflation spiral** a la Fisher
 - Demand for money rises – less idiosyncratic risk is diversified
 - Supply for inside money declines – less creation by intermediaries
 - Endogenous money multiplier = $f(\text{capitalization of critical sector})$
 - Paradox of Thrift (in risk terms)

Paradox of Prudence

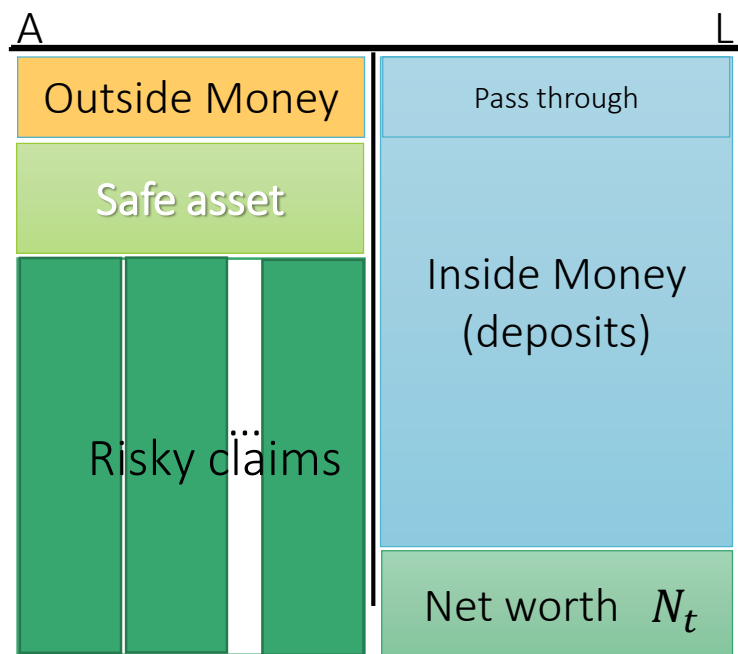
- Money store of value
- Banking “diversifier”
 holds risky assets, issues inside money
- Amplification/endogenous risk dynamics
 - Value of capital declines due to **Liquidity spiral**
 - Fire-sales
 - Flight to safety
 - Value of money rises **Disinflation spiral** a la Fisher
 - Demand for money rises – less idiosyncratic risk is diversified
 - Supply for inside money declines – less creation by intermediaries
 - Endogenous money multiplier = $f(\text{capitalization of critical sector})$
- **Paradox of Prudence**
~~Paradox of Thrift~~ (in risk terms)
 - Each banks tries to be reduce risk – to be micro-prudent
 - Leads to more endogenous macro-risk

Introducing a “Safe asset”

- Safe asset = good friend

- “It’s there when you need it.”

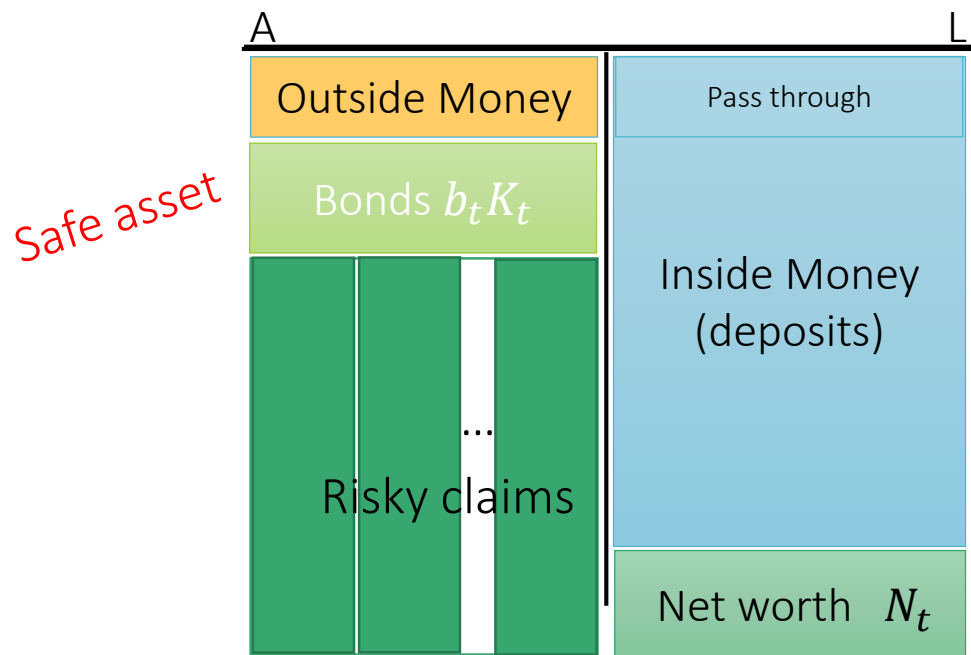
there = liquid/high price



- In bad times:

- risky claims lose in value
- “safe asset” appreciates exactly then – wouldn’t it be nice?
 - Long-term (default-free) government bond
 - & appropriate MoPo

Ex-post: Redistributive MoPo



- Adverse shock → value of risky claims drops
- Monetary policy
 - Interest rate cut ⇒ long-term bond price ↑
 - Asset purchase ⇒ asset price ↑
 - ⇒ “stealth recapitalization” - redistributive
 - ⇒ risk premia ↓
- Liquidity & Deflationary Spirals are mitigated

“stealth recapitalization”
LTRO, QE
Bottleneck Economics

Ex-ante: MoPo as insurance → MacroPru

- Ex-ante: insurance

- Negative shock: positive wealth transfer to bottleneck
- Positive shock: negative “

- MoPo substitutes in for “missing market”

- But moral hazard – excessive risk taking

- A case for macro-prudential regulation

Role of Government bond

- Special MoPo Role:

- Default-free long-term gov. bond

- Interest rate policy leads to income/wealth effects (not only substitution effects)

- Insurance role for extreme crisis states

- Defaultable bond – contingent debt

tension



Role of Government bond

■ Special MoPo Role:

Default-free long-term gov. bond

- Interest rate policy leads to income/wealth effects (not only substitution effects)

tension

■ Insurance role for extreme crisis states

Defaultable bond – contingent debt

■ “French view”

- never default
(straight jacket commitment)
(use banks as hostage)



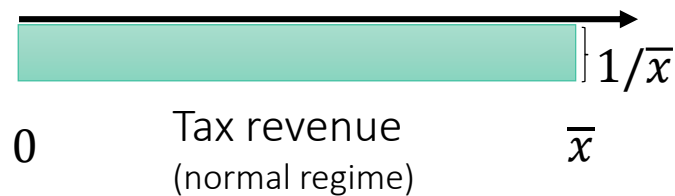
■ “German view”

- Default in extreme circumstances
- Limit banks’ sovereign risk taking



Government Debt: Toy Model

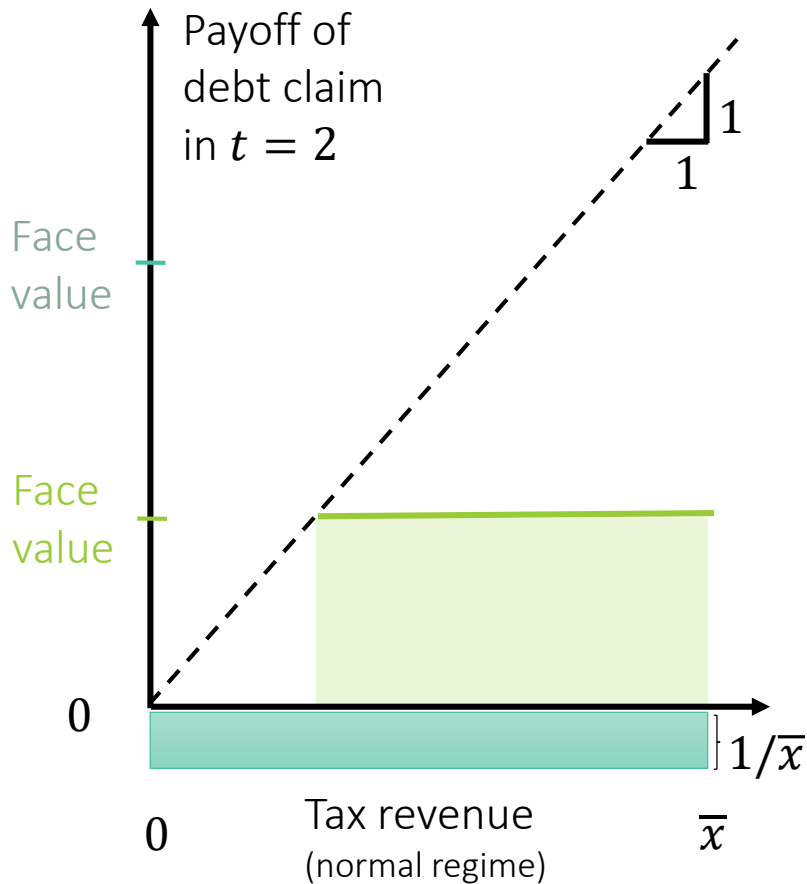
- $t = 1$ Refinance outstanding debt (from $t = 0$)
 - Determines face value of new debt
 - Default costs
- $t = 2$ uncertainty realizes -- state space
 1. x = GDP: Economic activity – income of citizens
 2. x = Primary surplus: absent austerity measures/extra taxes



- Repay debt
- Extra austerity measures/taxes to cover shortfall
- Default decision

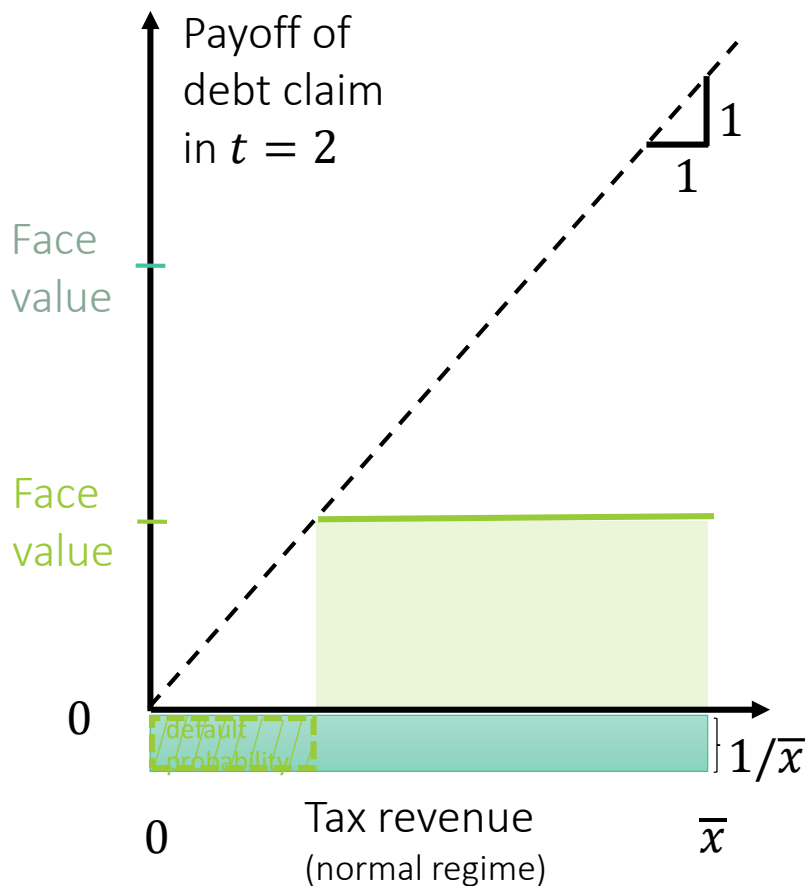
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors



Government Debt

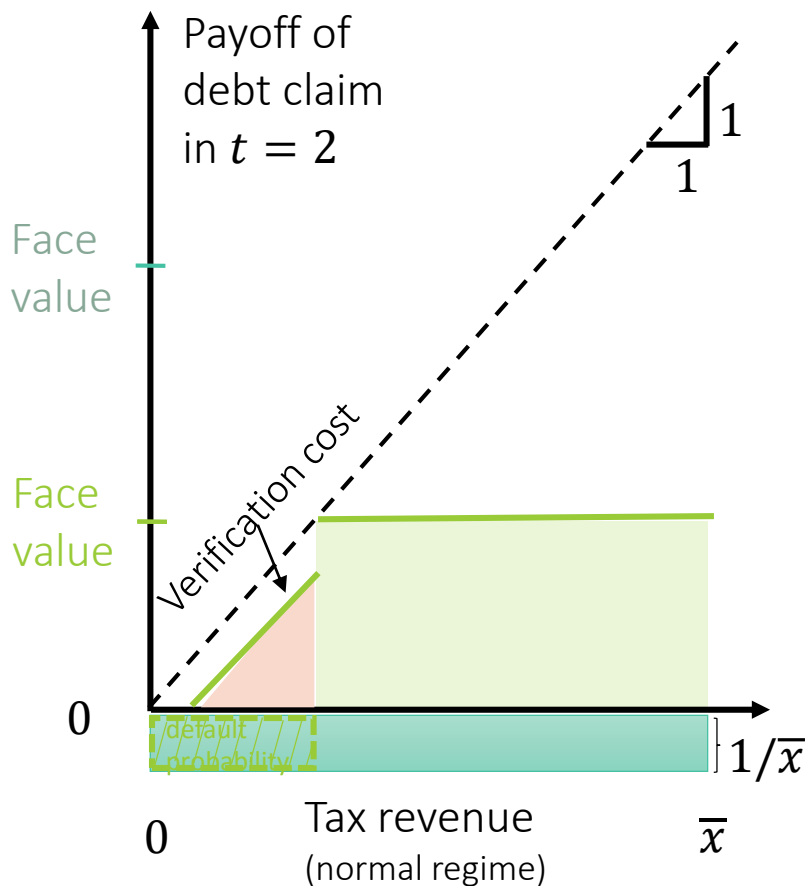
- Limited commitment: verification cost
- Risk-neutral investors



Government Debt

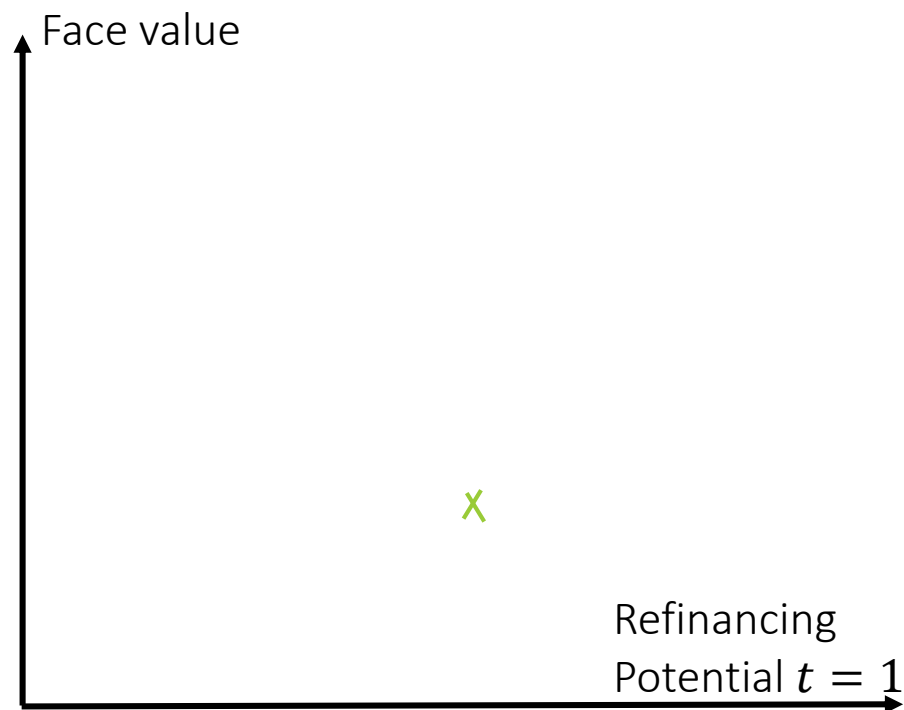
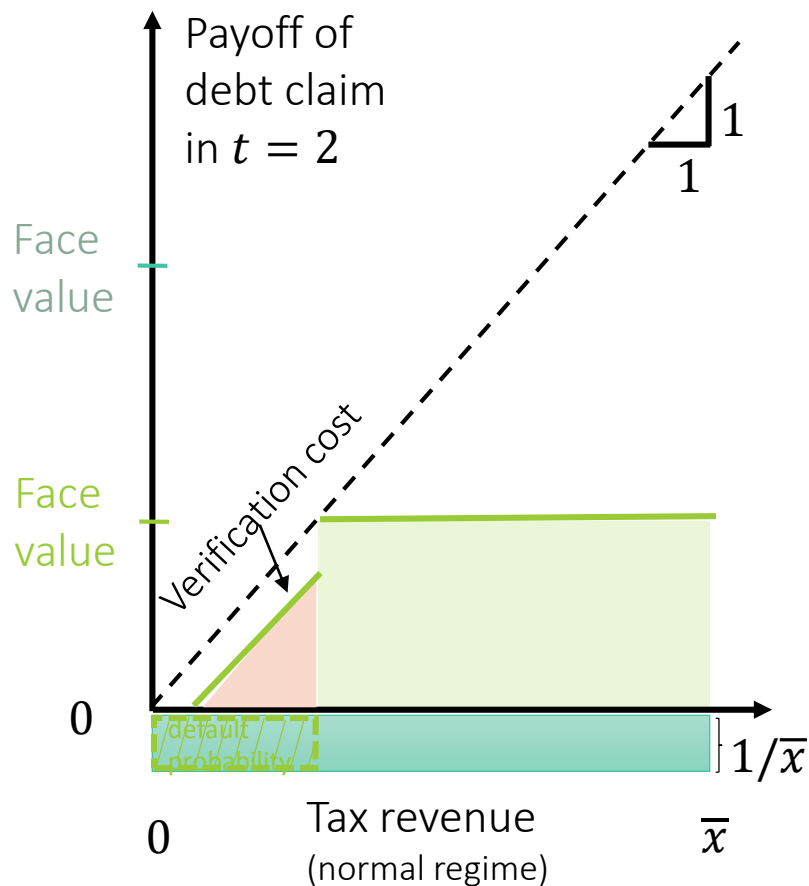
- Limited commitment: verification cost
- Risk-neutral investors

- Contingent debt
 - Partial default in bad states



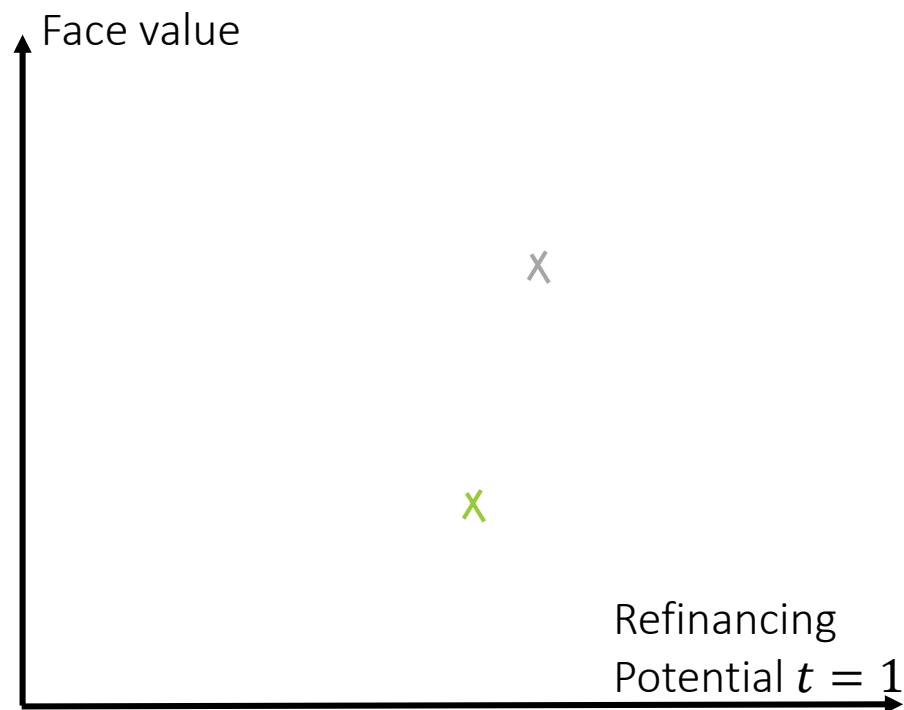
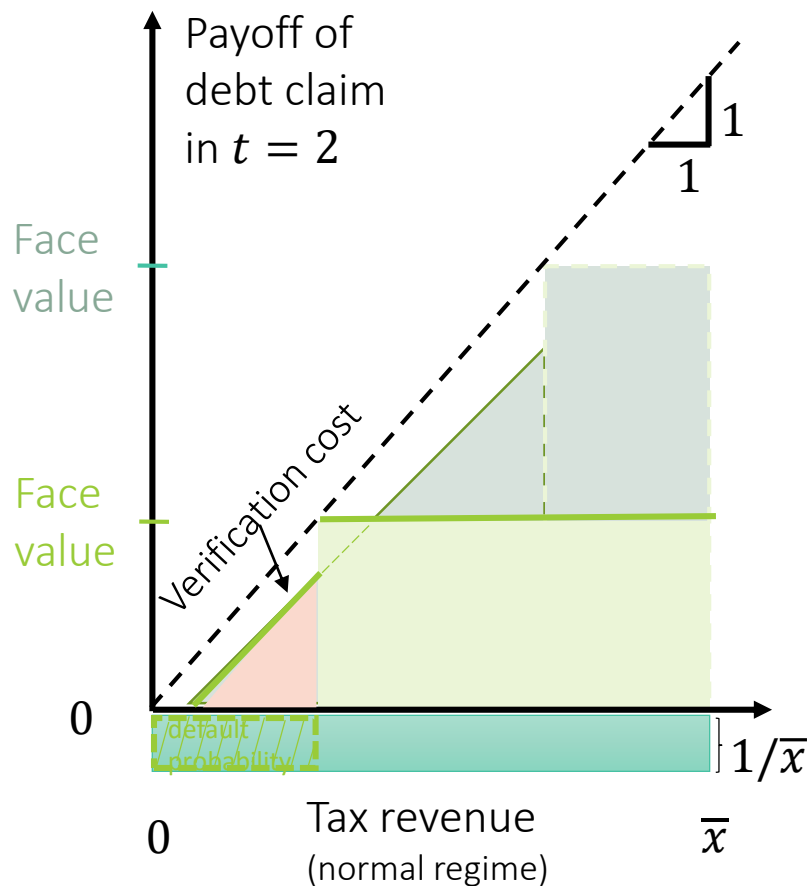
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors



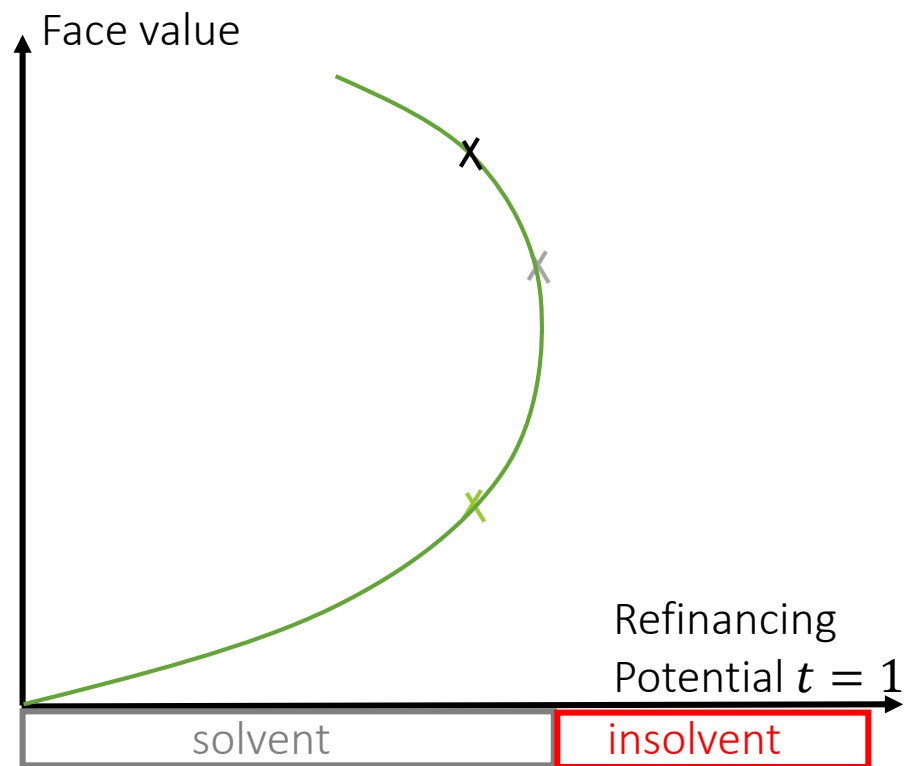
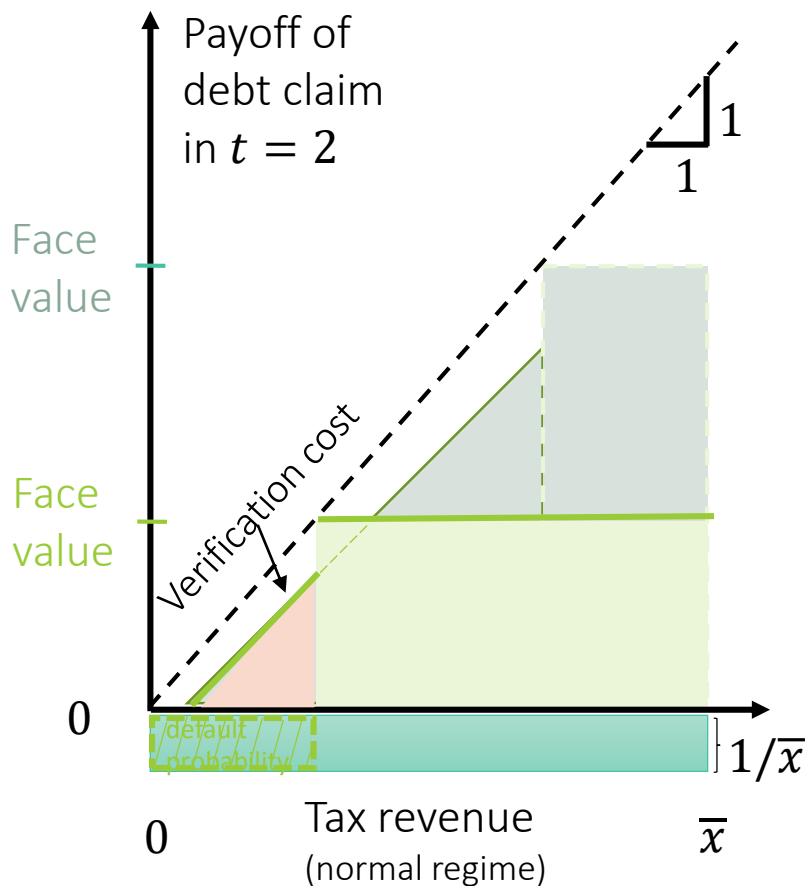
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors



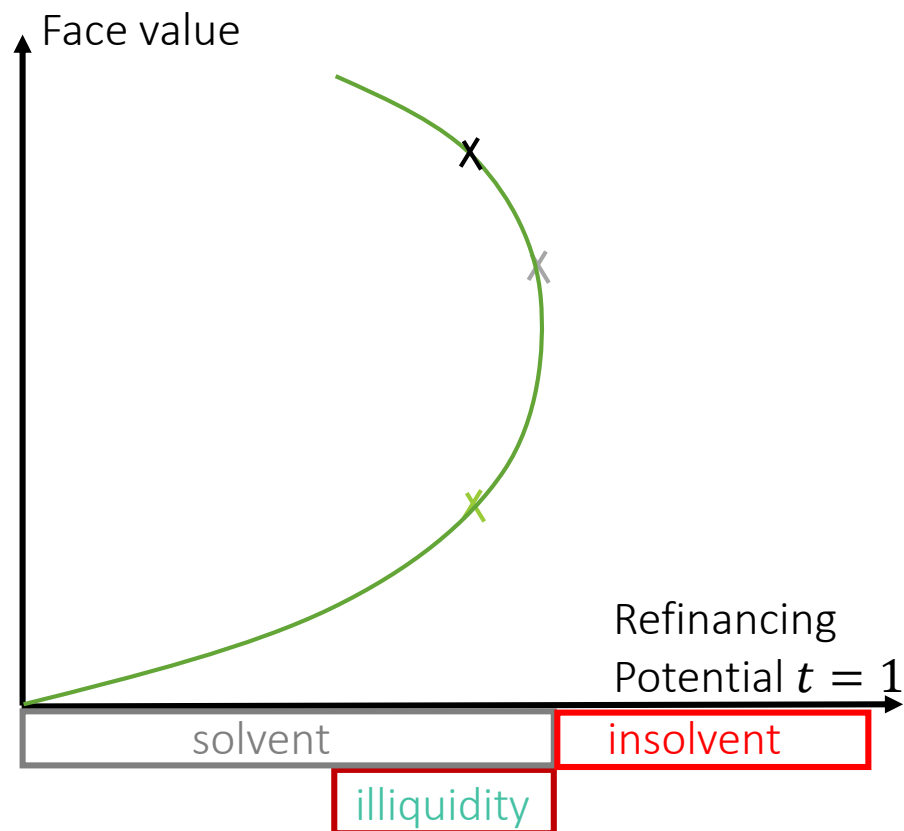
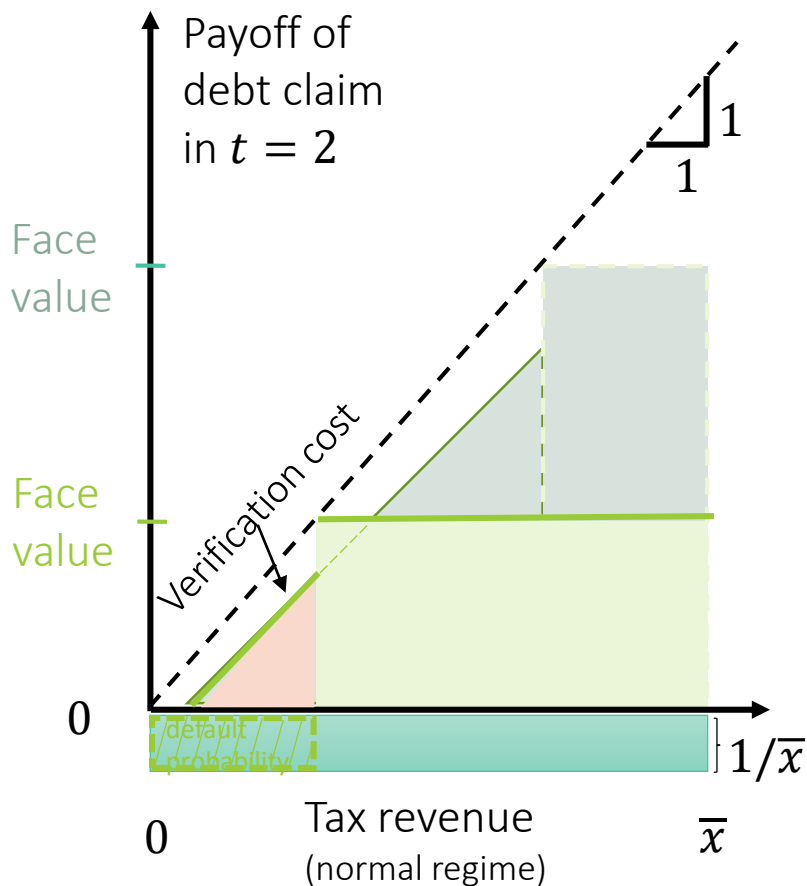
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors



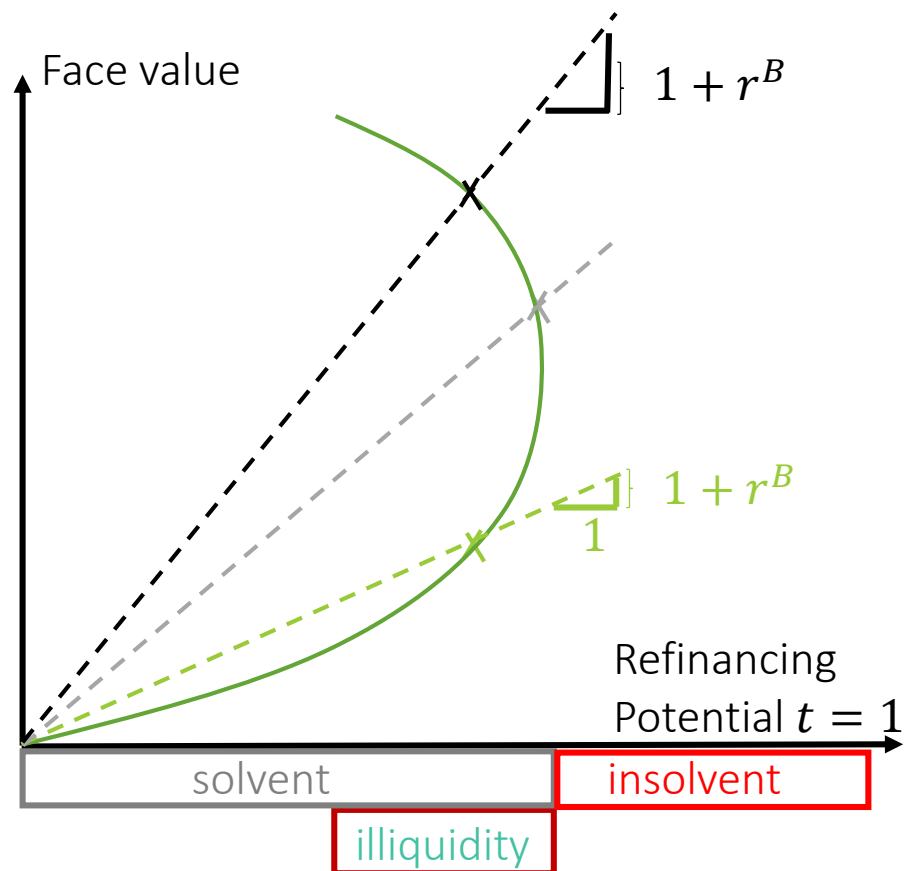
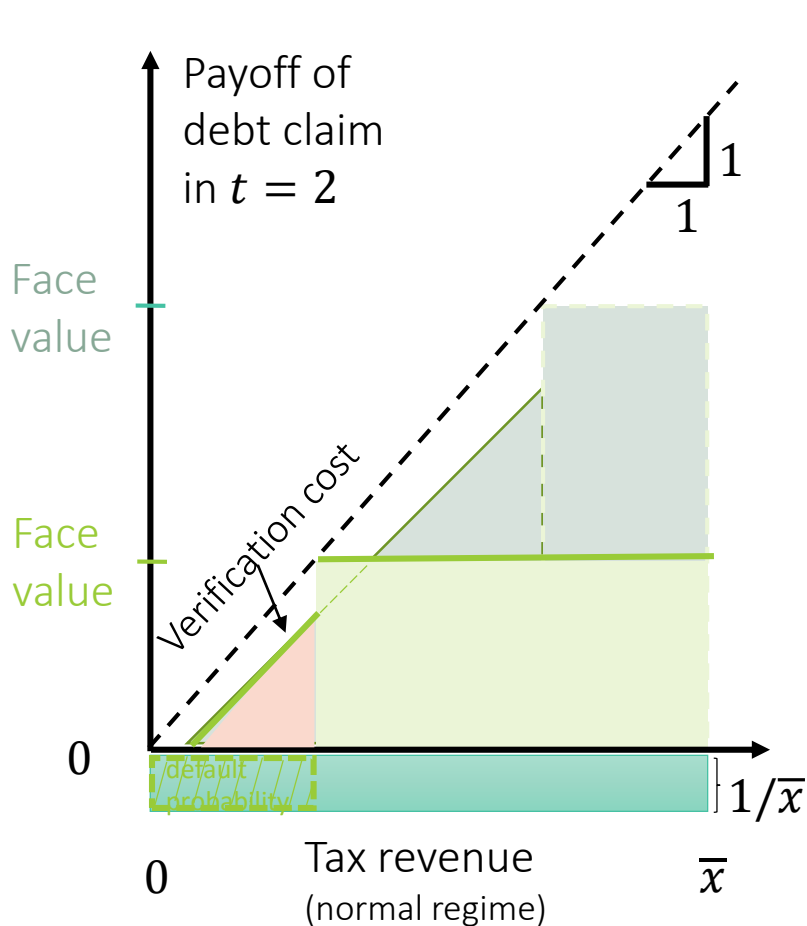
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

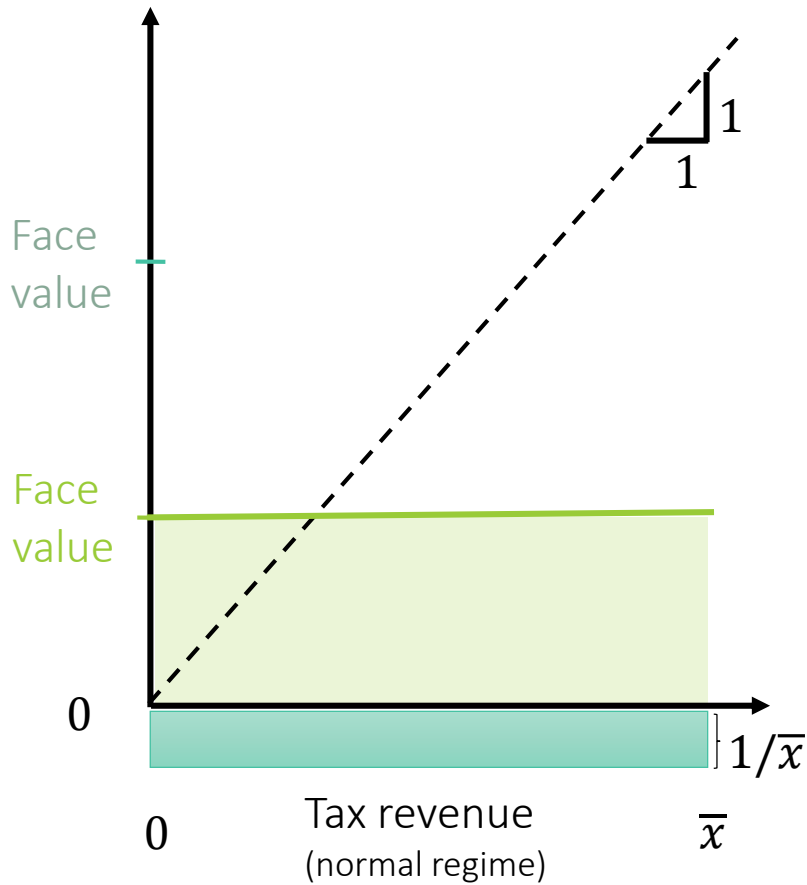


Government Debt

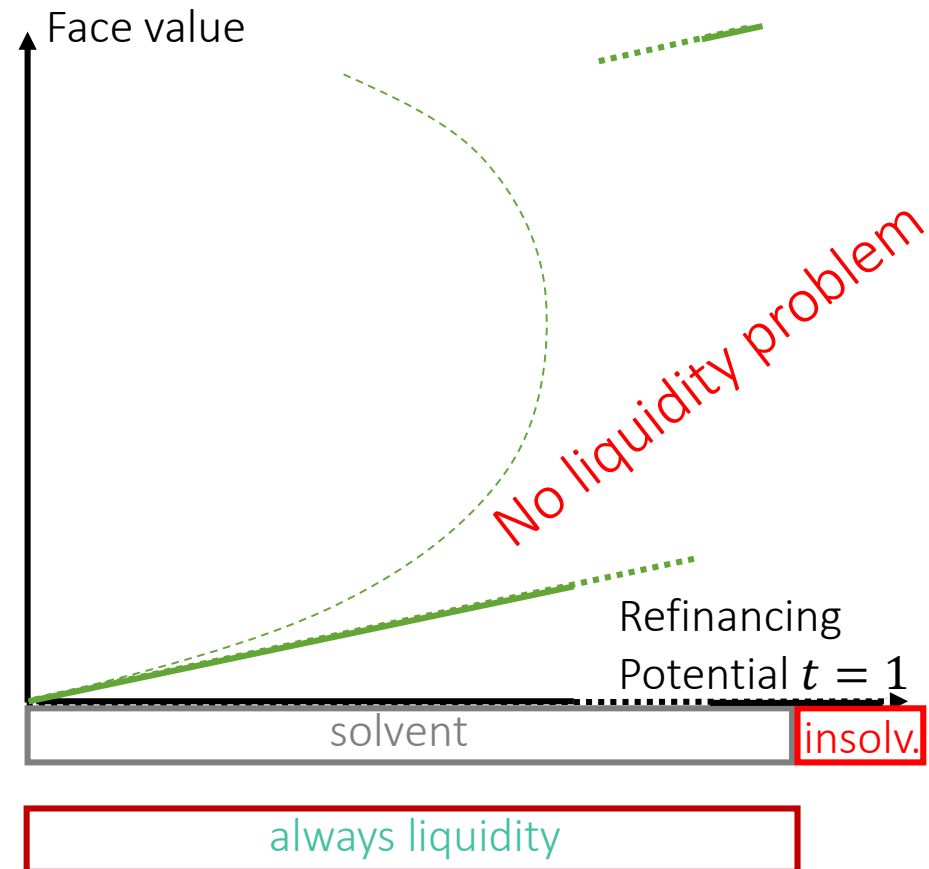
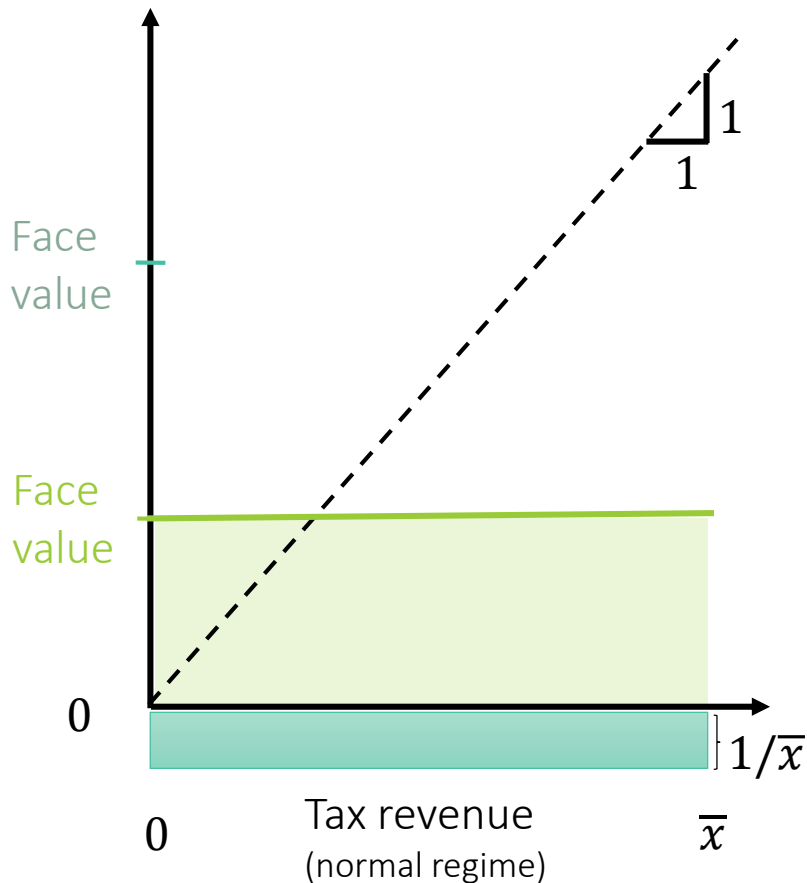
- Limited commitment: verification cost
- Risk-neutral investors



“Straight Jacket” Commitment

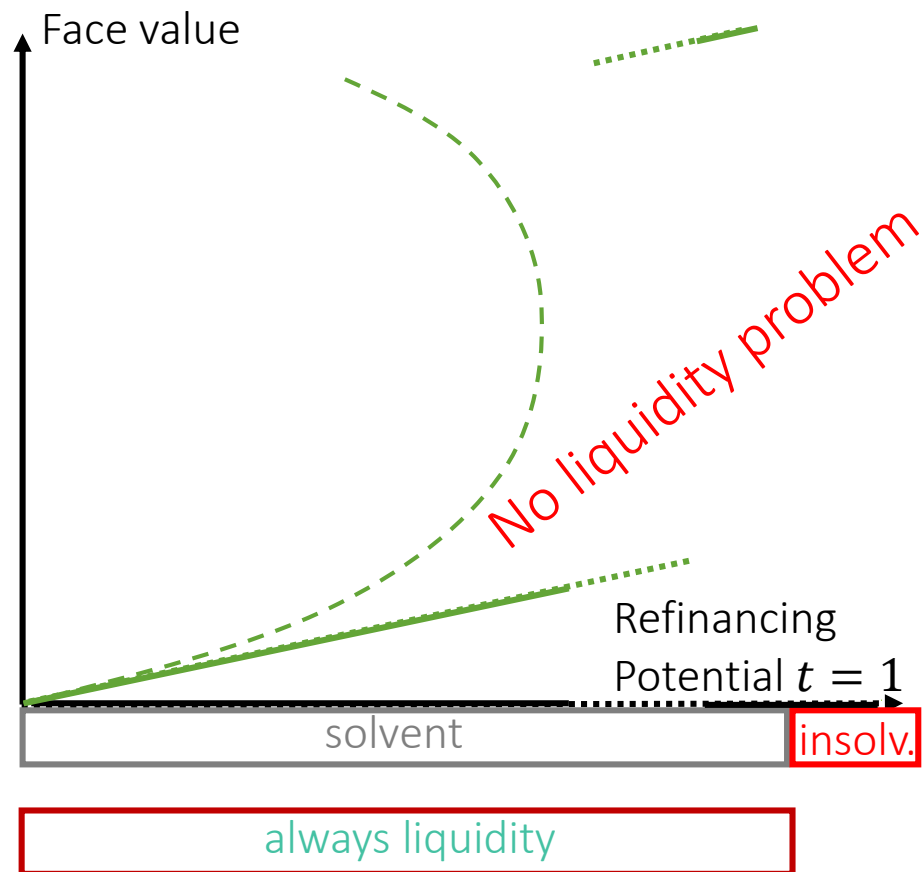
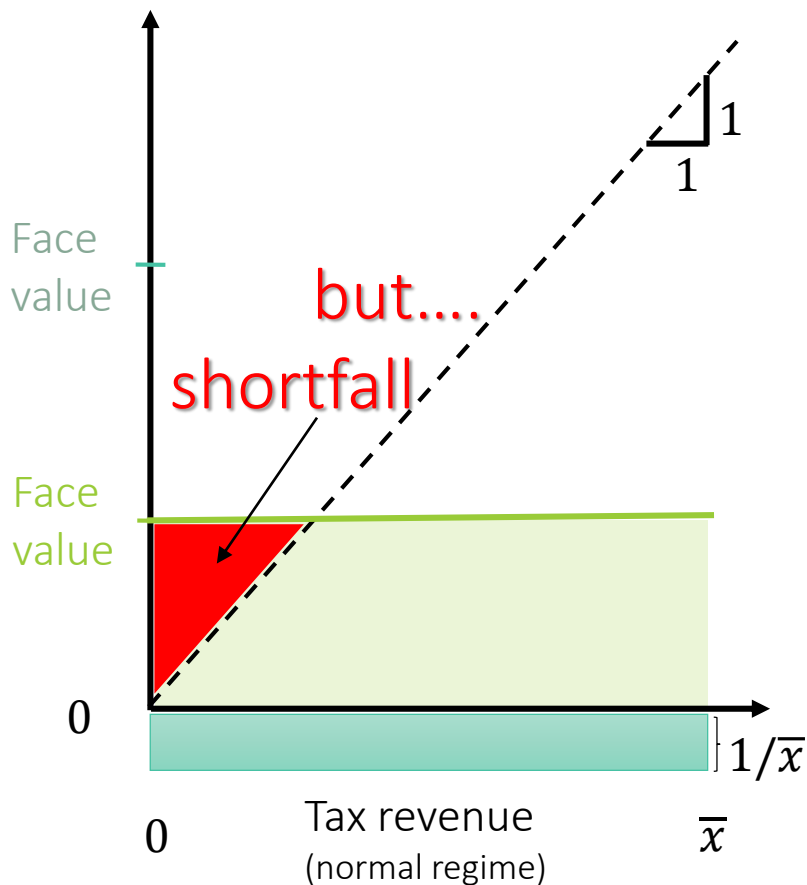


“Straight Jacket” Commitment



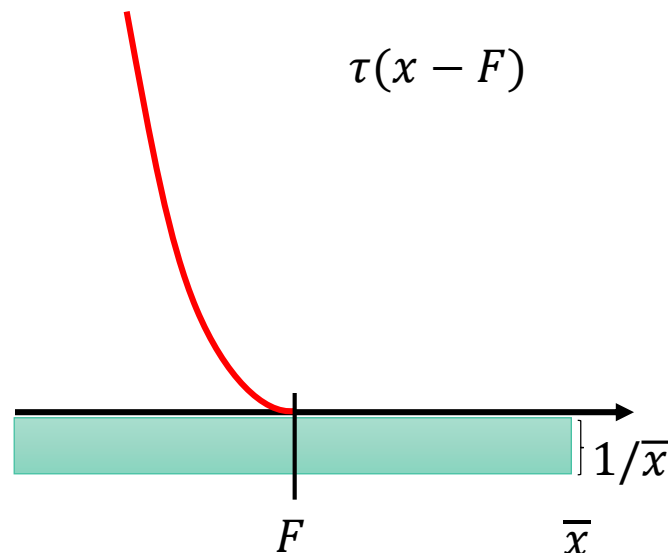
“Straight Jacket” Commitment

- ... but tax short-fall
- Needs to raise taxes/austerity: distortionary costs in catastrophe states



“Straight Jacket” Commitment

- Shortfall needs to be financed through
 - Austerity measures
 - Emergency tax hikes

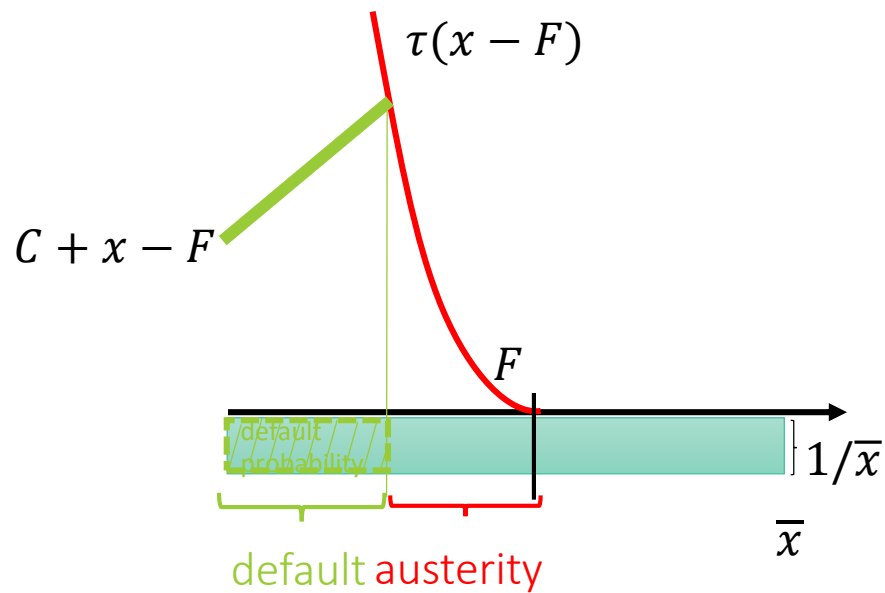


No liquidity problem

- For very low realizations of $\bar{x}$ these costs might go to infinity

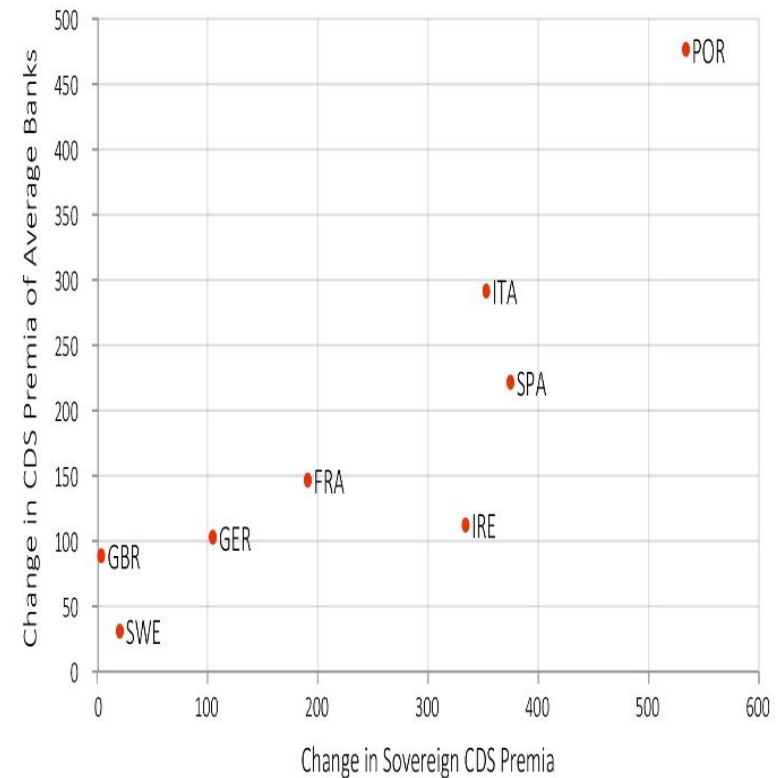
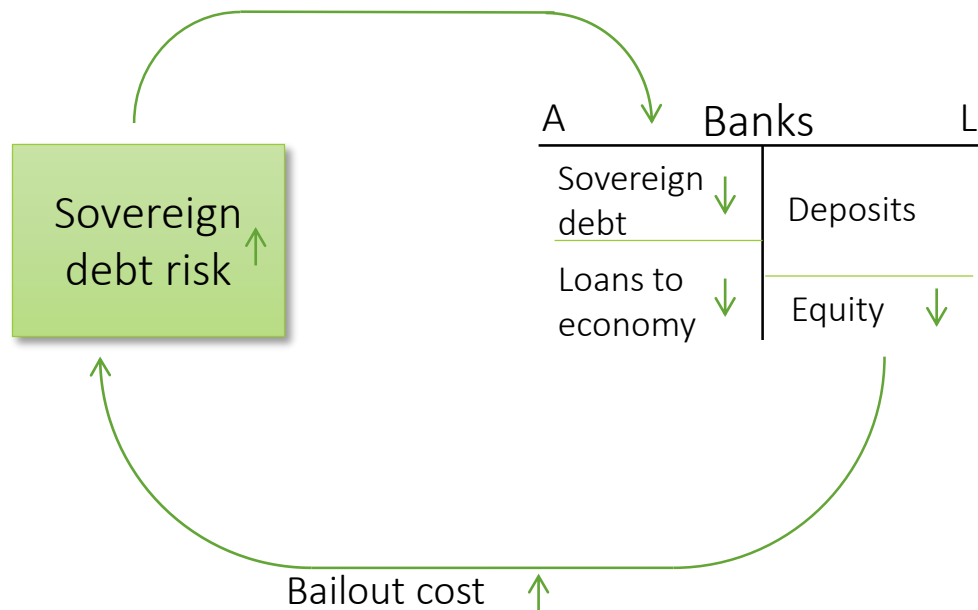
“Costly” Commitment

- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$



||| Bailout Diabolic Loop

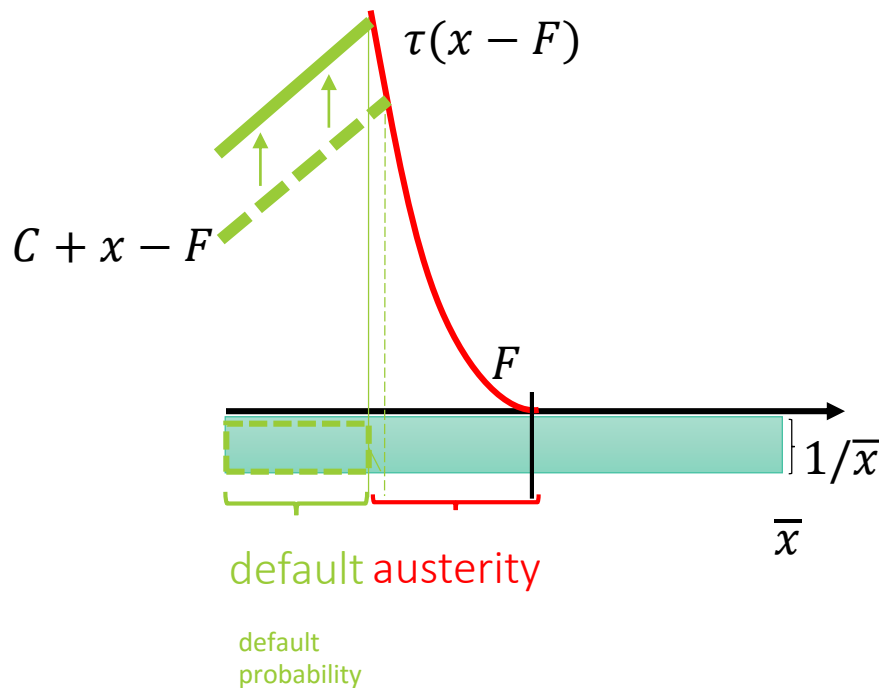
- Trigger: fiscal or financial



“Bank Hostage” Commitment

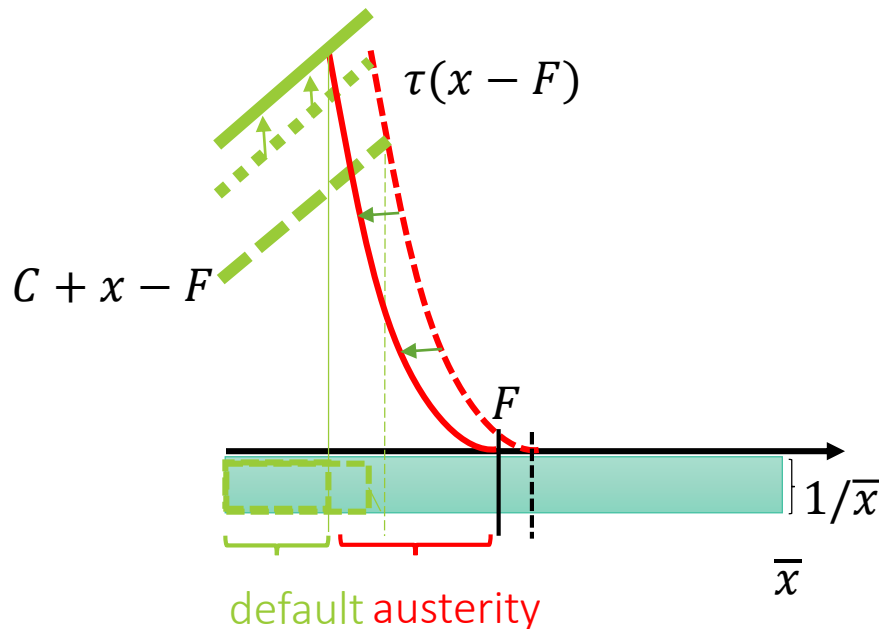
- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C

➡ Lower default probability



“Bank Hostage” Commitment

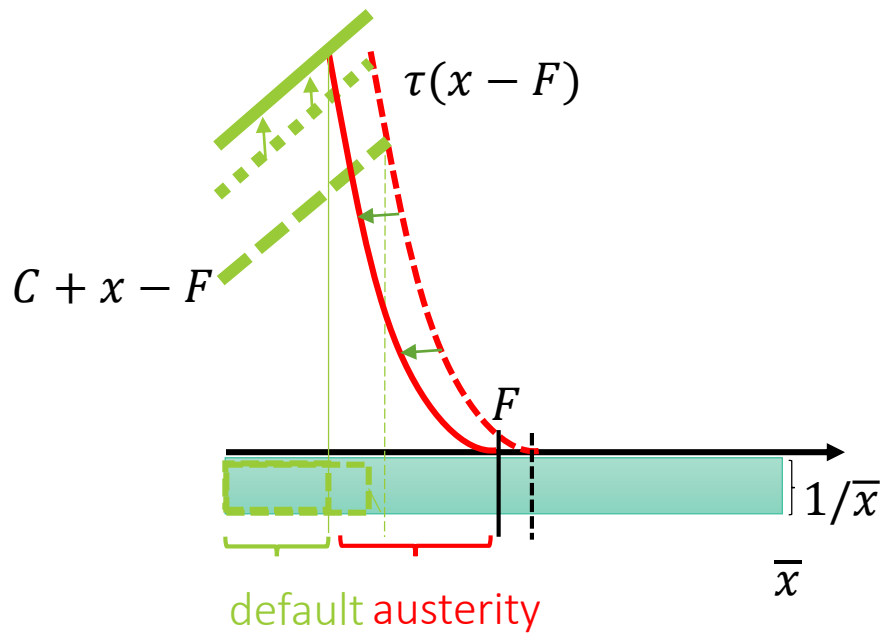
- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C



- ➡ Lower default probability
- ➡ Lower verification cost
- ➡ Lower face value F
interest rate

“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C



- ➔ Lower default probability
- ➔ Lower verification cost
- ➔ Lower face value F
interest rate

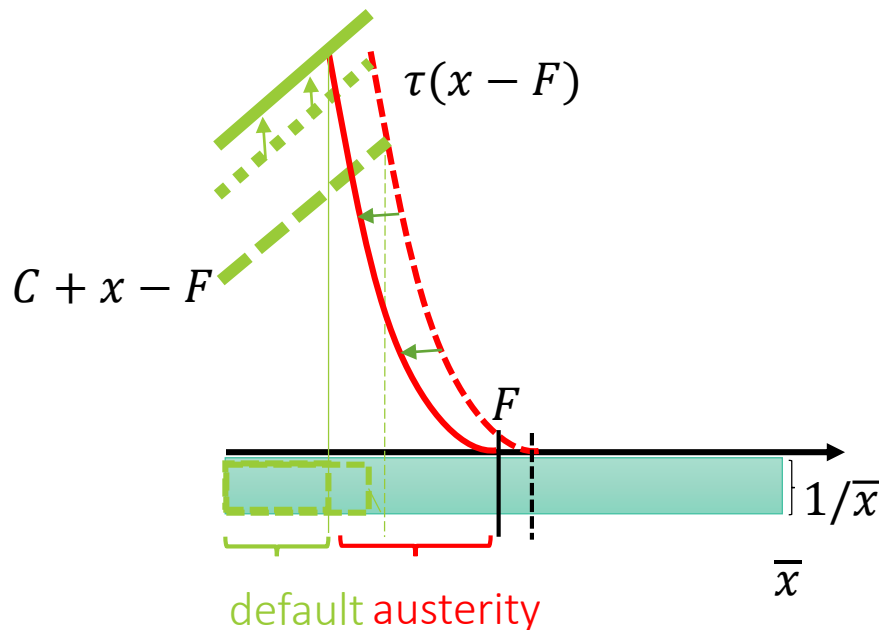
Again

- ➔ Lower default probability



“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C



- ➔ Lower default probability
- ➔ Lower verification cost
- ➔ Lower face value F
- interest rate

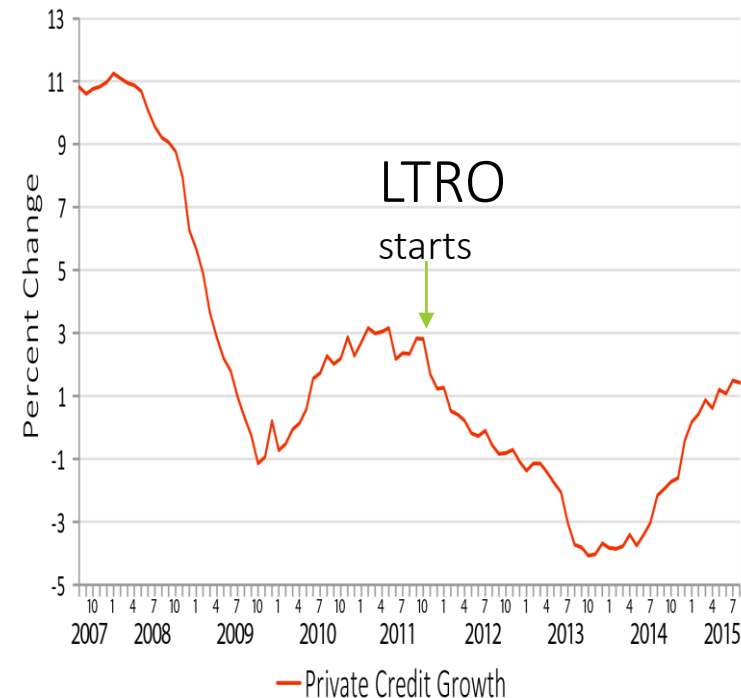
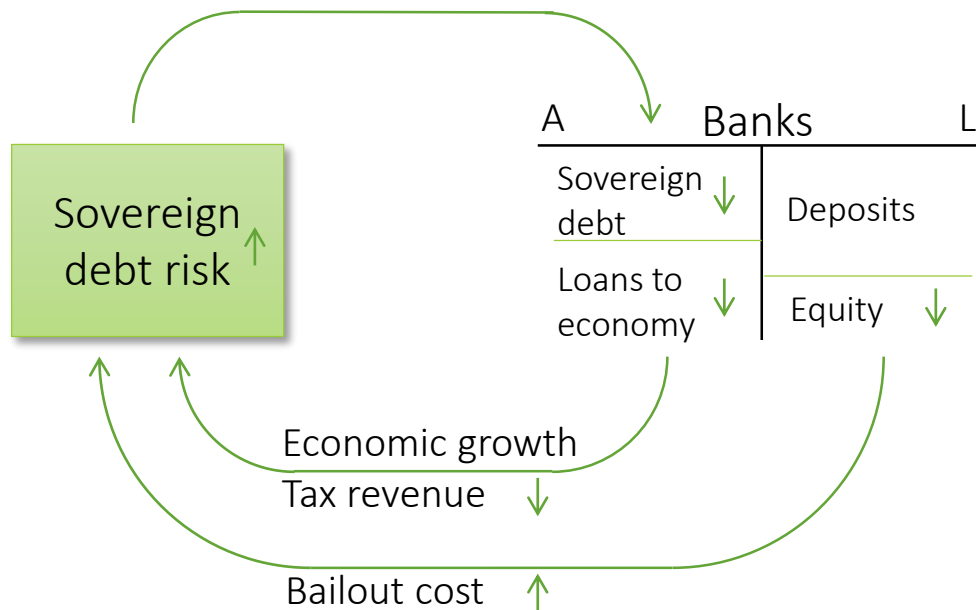
Again

- ➔ Lower default probability

- Default prob ↓ , but if: higher cost C & higher austerity τ
- “doubling up strategy”

Credit Diabolic Loop: overturns argument

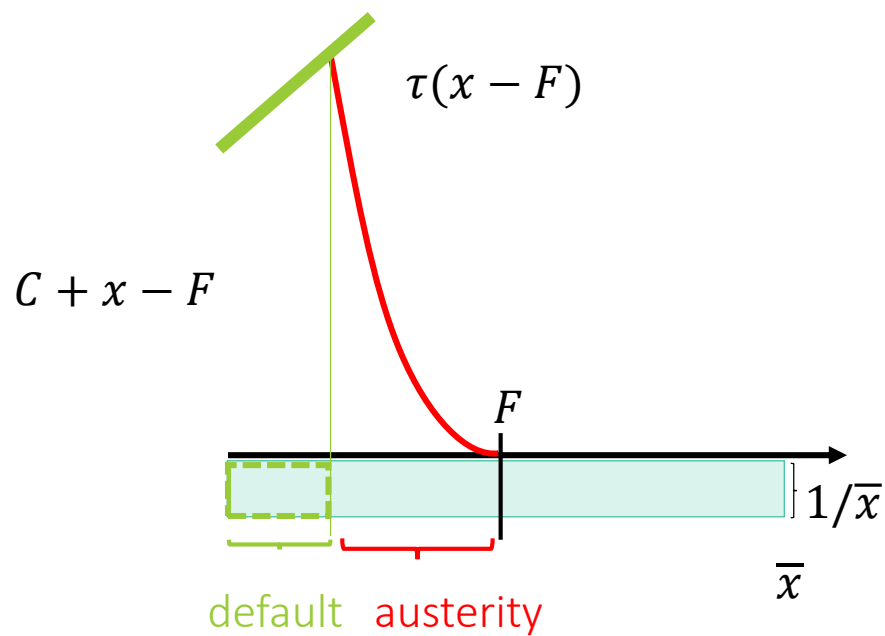
- Less lending to real economy



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

|| Credit Diabolic Loop

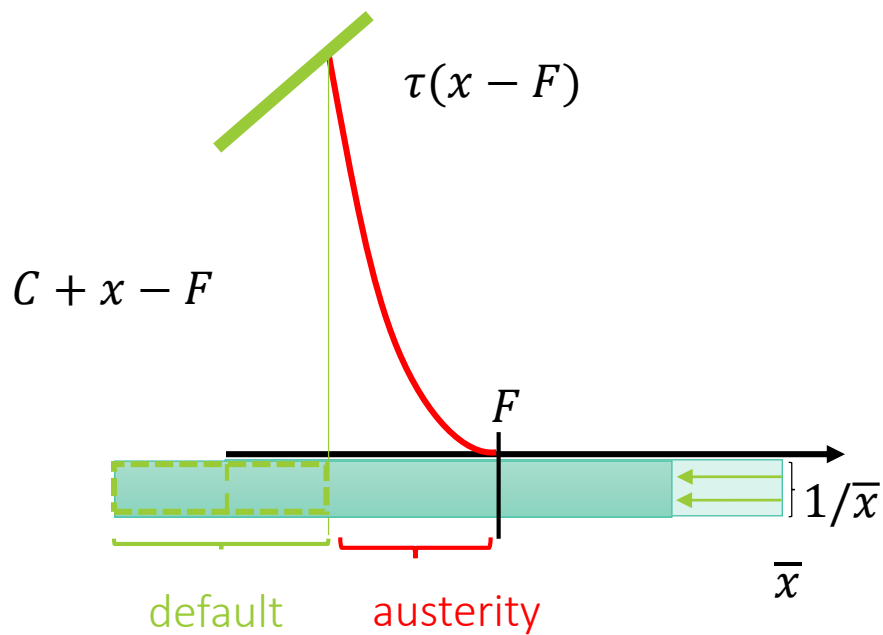
- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C



➡ Lowers GDP, x

|| Credit Diabolic Loop

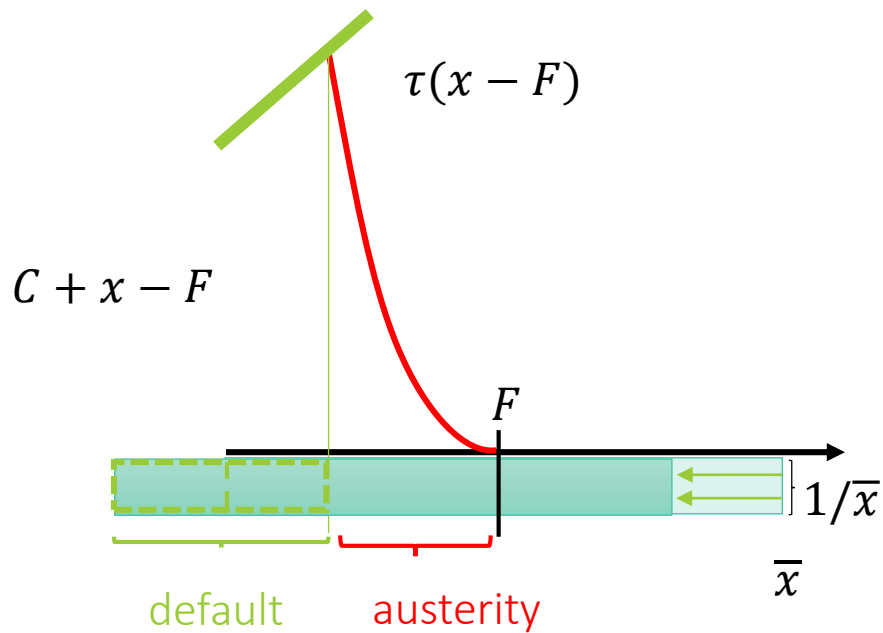
- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C



- ➔ Lowers GDP, x
- ➔ Default probability rises

|| Credit Diabolic Loop

- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C

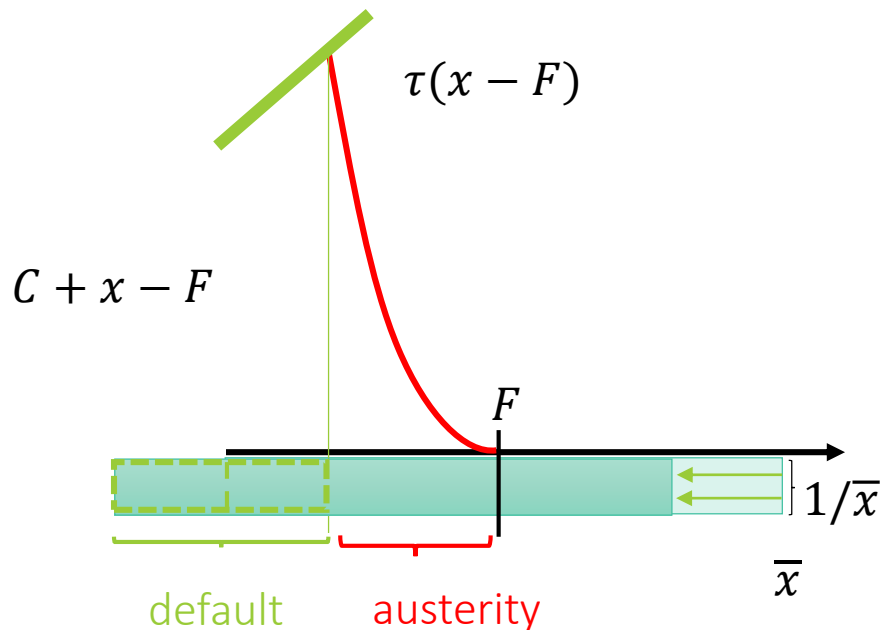


- ➔ Lowers GDP, x
- ➔ Default probability rises
- ➔ Verification costs rise
- ➔ Face value F rises
interest rate rises



||| Credit Diabolic Loop

- Default if austerity costs + repayment exceed $C + x$
 - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs C



- ➔ Lowers GDP, x
- ➔ Default probability rises
- ➔ Verification costs rise
- ➔ Face value F rises
interest rate rises

- 2nd “Credit/GDP Diabolic Loop” can undo all the benefits
 - Bank hostage is not even a doubling up strategy

“Bank Hostage” Commitment

- Extremely high commitment cost C due financial dominance
 - “straight jacket commitment”
- Reduces illiquidity problems
- Lower default prob., lower interest rate, **but** if failure then much worse “doubling up strategy”
- &... **but** 2nd Diabolic Loop goes in opposite direction
- No safety valve

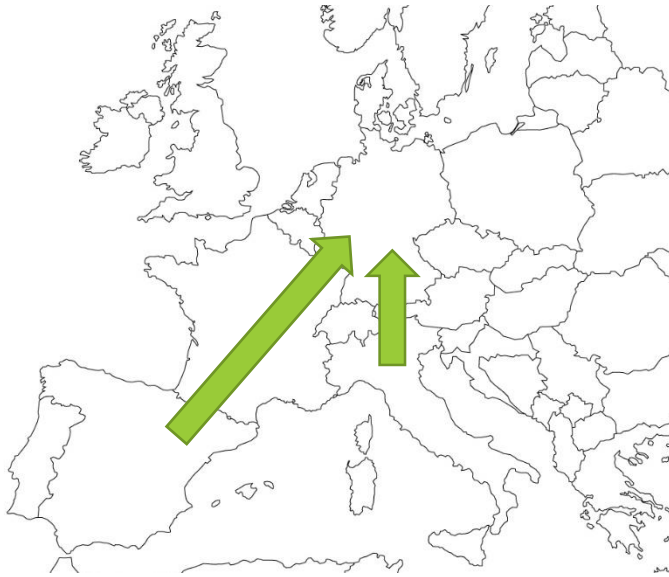


|| The two “safe asset challenges”

- Challenge 1:
Safe asset + sovereign debt restructuring w/o diabolic loop
French IMF/Anglo-American/German
- Challenge 2:
No asymmetrically supplied safe asset
 - German Bund

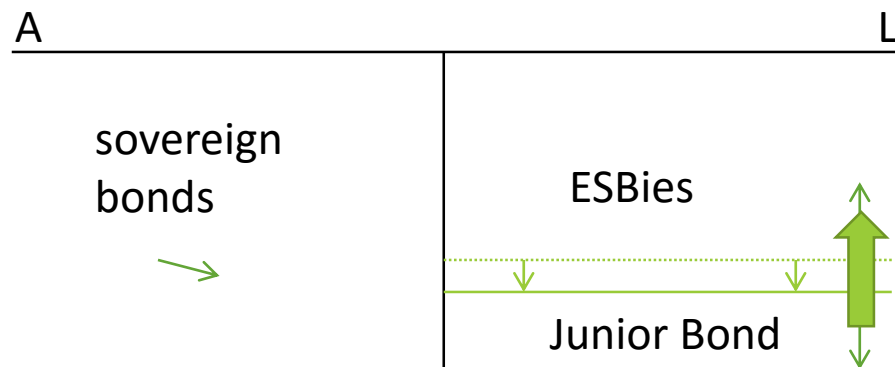
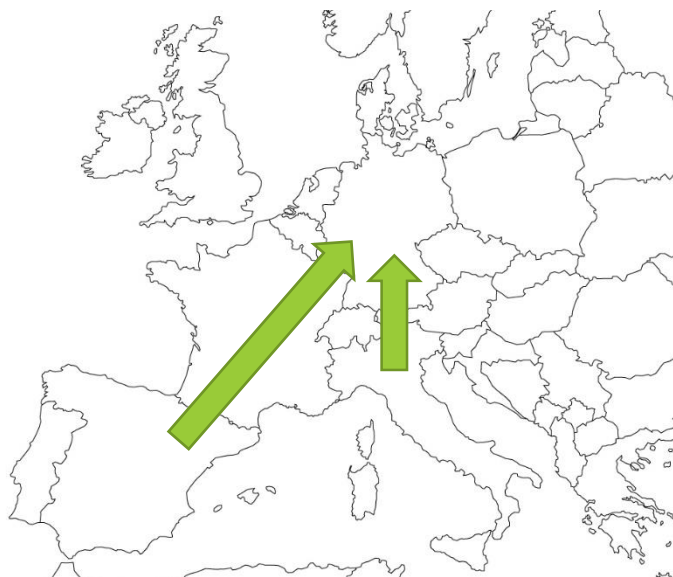


|| Cross-border flight to safety



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

||| Solution: ESBies



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

|| Maastricht's Ghost: Fiscal & Monetary

"French"

1. Discretion

2. Solidarity

- Fiscal union
- Illusion of default free bonds
- Eurobonds with joint liability



3. Liquidity/contagion

4. Keynesian Stimulus Demand

- Output gap
- Reforms in boom

"German"

Rules

Liability

No-bailout clause/rule
SDRM/insolvency procedure
(ESBies) without joint liability

Solvency

Austerity/Reform Supply

unsustainable credit boom
Reforms in crisis (political economy)



"Rhine-divide"

|| Maastricht's Stepchild: Financial

“French”

- 5. Bailout banks
illiquidity



- 6. No default illusion

zero risk weights
diabolic loop as straight
jacket commitment
“banks as hostage”

“German”

- Bail-in
insolvency



- Debt restructuring

positive Basel risk weights
avoid diabolic loop
with sufficient equity

“Rhine-divide”

Conclusion – policy implications

- Transfers without Politics: Insurance as a way of making automatic stabilizers?
 - The insurance principle and predictability
 - Support and solidarity need to be credible, i.e. based on consistent rules
- Sovereign Debt restructuring mechanism for Europe
- ESBies as safe asset for Europe
 - Without default risk
 - Without joint liability
- Break diabolic loop
- European Banking charter
 - Tax revenue for European budget
 - European bailout