

# “The Problem that Wasn’t: Coordination Failures in Sovereign Debt Restructurings”

## Jeromin Zettelmeyer

Discussion by Yannick Kalantzis (Banque de France)

Paris, December 17–18, 2012

**Disclaimer:** the views expressed in this presentation are those of the speaker and do not necessarily reflect the views of the Banque de France.

# Why was it so easy to restructure sovereign bonds?

## Problems

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- holdout problem
- coordination failures



## Solutions

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- exit consents
- minimum participation thresholds

# Outline

1. The model
2. Comments

# 1. The model

# Assumptions

- ① Take-it-or-leave-it offer: 50 cents on the dollar

# Choice of bond holders

Participate  $U^P = 0.5$

Holdout  $U^H = 0$

Utility gain of participating  $U^P - U^H = 0.5$

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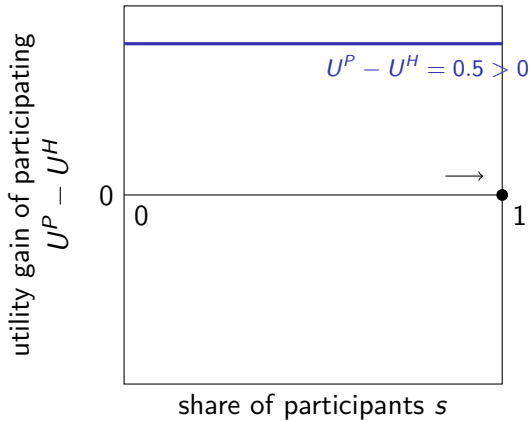
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# Take it or leave it



# The holdout problem

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- ① Take-it-or-leave-it offer: 50 cents on the dollar
- ② Holdouts have a recovery technology successful with probability  $\pi$  (perfectly correlated)

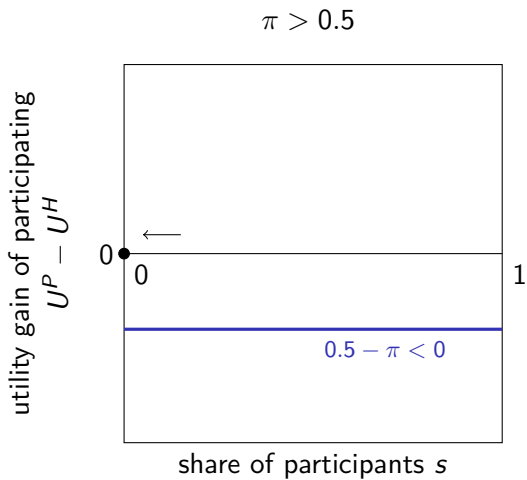
# Choice of bond holders

Participate  $U^P = 0.5$

Holdout  $U^H = \pi$

Utility gain of participating  $U^P - U^H = 0.5 - \pi$

# Holdouts



Solution: exit consents

# Exit consents

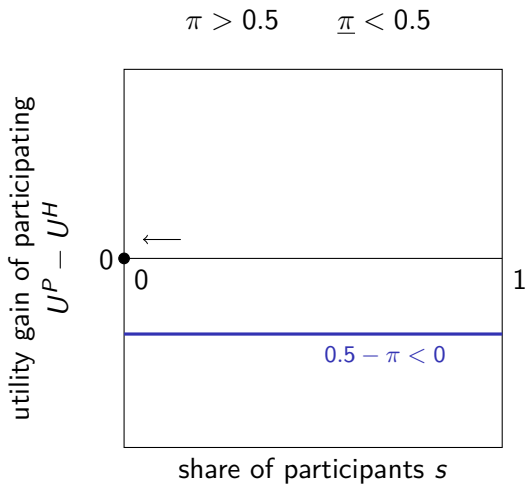
if a majority of bondholders accept the offer

non-financial terms of the old bond contracts change

▶  $\pi$  lowered to  $\underline{\pi} < 0.5$

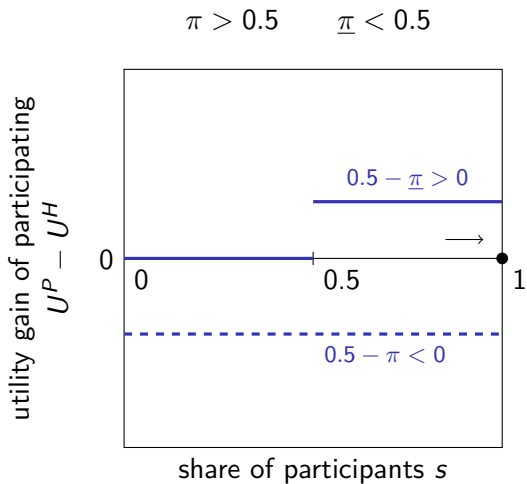
otherwise, exchange is cancelled

# Exit consents





# Exit consents



Why is the "holdout problem" a problem?

# Assumptions

- ① Take-it-or-leave-it offer: 50 cents on the dollar
- ② Holdouts have a recovery technology successful with probability  $\pi$  (perfectly correlated)
- ③ Limited resources: 75 cents per creditor distributed proportionally to face value of claims

# Choice of bond holders

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If  $s = 0$ : not enough resources

Participate

$$U^P = (1-\pi)0.5 + \pi 0.5 \times 0.75 = 0.425$$

Holdout

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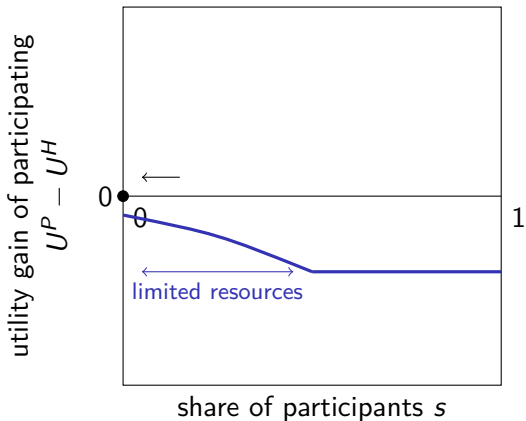
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▶ a prisoner's dilemma

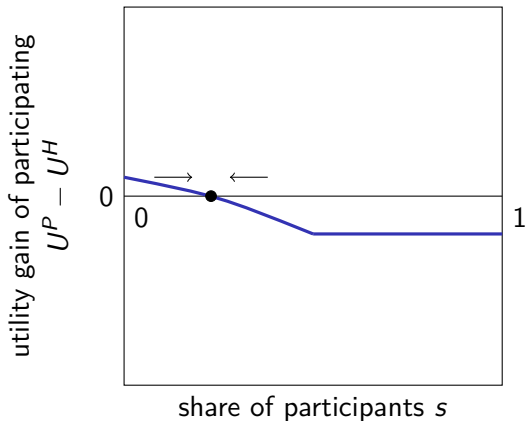
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# Assumptions

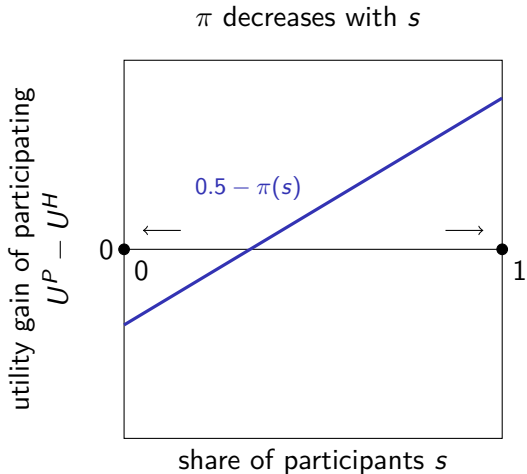
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- 2 Holdouts have a recovery technology successful with probability  $\pi$  (perfectly correlated)
- 3 Limited resources: 75 cents per creditor distributed proportionally to face value of claims
- 4 Disorderly restructuring  
if promised repayment  $>$  total resources,  
then fraction  $1 - \delta$  of repayment is lost to debtors

# Coordination failures

# Assumptions

- 1 Take-it-or-leave-it offer: 50 cents on the dollar
- 2 Holdouts have a recovery technology successful with probability  $\pi$  (perfectly correlated)
- 5 Strategic complementarity  
 $\pi$  is a decreasing function of  $s$

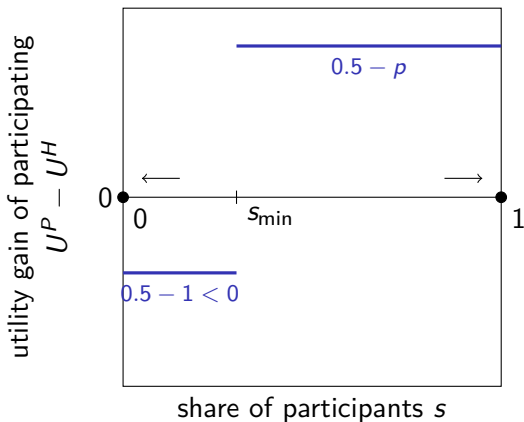
# Strategic complementarity



# Strategic complementarity

In the paper:

$\pi = 1$  when  $s < s_{\min}$  and  $p$  otherwise

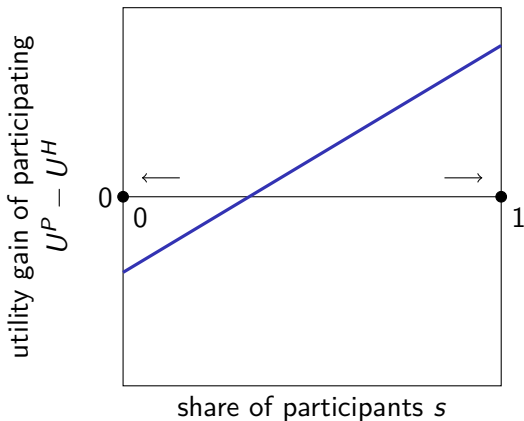




Solution: minimum participation threshold

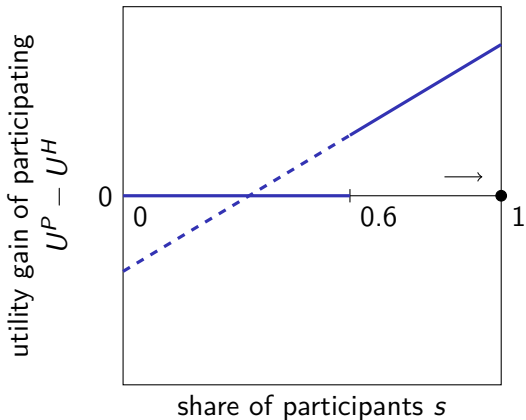
# Minimum participation threshold

Exchange proceeds if  $s > 0.6$



# Minimum participation threshold

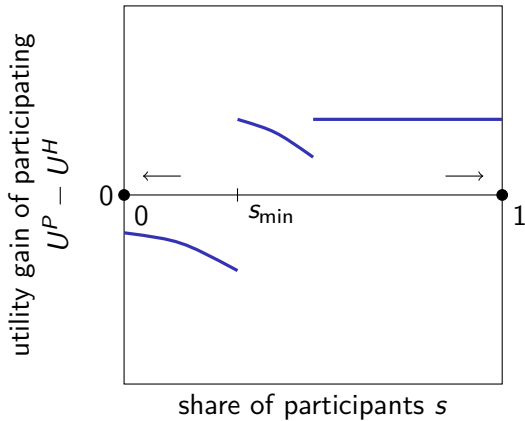
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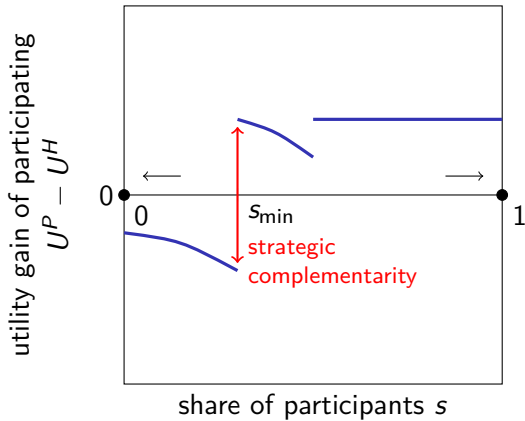
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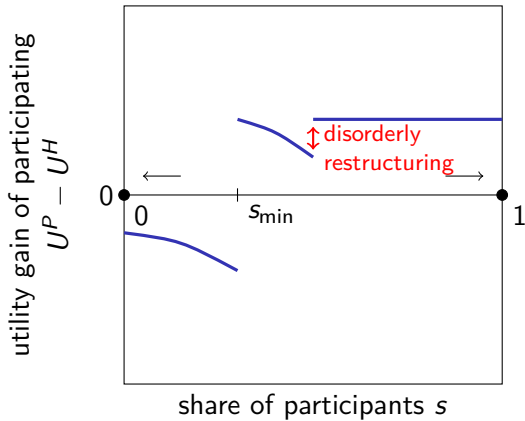
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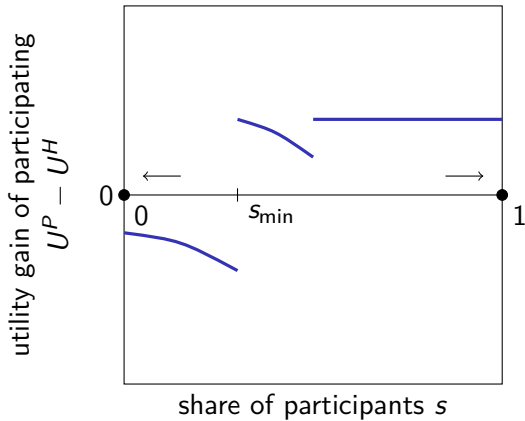
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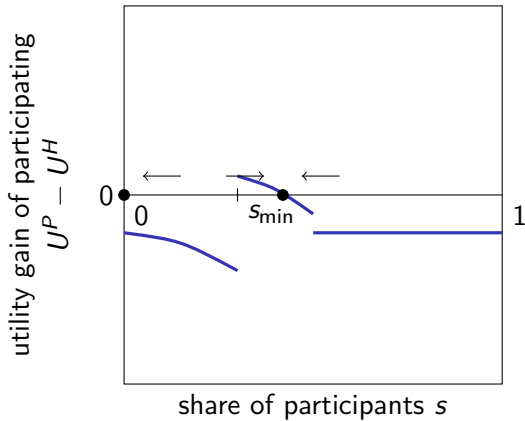


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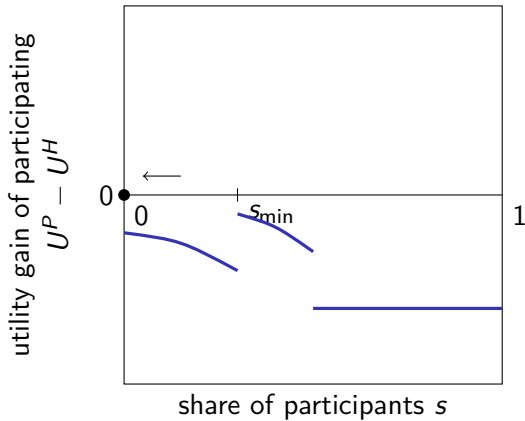




# Full model



# Full model



# Many other topics in the paper

Endogenous choice of haircut

Exit consent vs collective action clauses

Large bondholders

Several bond issues

## 2. Comments

# Strategic interaction between bondholders

Key assumption:  
more holdouts increase the probability  
that they succeed in getting repaid

- What is the interpretation?  
(what is  $s_{\min}$ ?)
- Existing literature has often used the opposite assumption  
single holdout can keep bonds in technical default: strong  
incentive for sovereign to pay him back
- Possible interpretation: effect of political pressure?  
see Engelen, Lambsdorff (2009)

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# Efficiency

Paper is more descriptive than normative.

But interesting results concerning pay-offs and efficiency  
(e.g. several prisoner's dilemmas)

Suggestion: gather those results and expose them systematically to  
give them more visibility

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