Writing-down debt with Heterogeneous creditors:
lock laws and late swaps

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Holdouts, Creditor heterogeneity and the RUFO clause

- Sovereign debt restructuring in the presence of holdouts.
- A role for delay (in practice, a lock law) in bargaining with heterogeneous creditors?
- A Rights upon future offers ("RUFO") clause (lock law) ensures that a party who has agreed contractual terms, gains certain rights if other parties in future obtain better or different terms.
- In the initial debt swap of 2005, where only about 70% of the bonds were exchanged, the Argentina sovereign added a RUFO clause (ratified in Parliament) to assure those in the bond exchange that they would have access any improved offers made over the following decade.

Debt Restructuring

- An alternating-offers model is extended to allow for exogenous creditor heterogeneity: creditors may be patient or impatient (though who is which is not known to the debtor).

- Any outcome of the bargaining game must involve delay, a loss in bargaining efficiency, but needed as a costly signal to identify the more patient creditors.

- Multiple equilibria due to coordination failure.

Second-best and lock law

- Second-best delay:

(i) an initial offer which, together with a 'lock-law' (RUFO clause), is sufficient to tempt impatient creditors (exchange bondholders) into a prompt bond exchange;

(ii) followed by a delayed, but more generous, swap with the patient creditors (holdouts), timed to take place when the lock-law expires.

- Costly signalling but no coordination failure

Holdouts

- Holdouts may be endogenous, late-comers who buy distressed bonds with a view to litigation for the full face value plus their costs of waiting.

- Such holdouts (so-called vulture funds) aim to recover all their waiting costs; and their activities can seriously disrupt debt restructuring (a negative externality).

Responses

- Ex ante provisions: adding aggregation clauses to CACs; finding substitutes for US-law bonds; creating some form of SDRM; or promoting soft law.

- Ex post, however, the second-best benchmark may be useful to indicate a basis for compromise.

The model I

- One debtor denoted by D with discount rate $\delta_D > 0$ and the associated discount factor $e^{-\delta_D \Delta t}$ where Δt is the minimal time interval between two successive rounds of bargaining.

- Two creditors the holdout denoted by H and the exchange bond holder denoted by X distinguished by their discount rates $0 < \delta_H < \delta_X$. Each creditor knows its own discount rate; however, the debtor does not know who is which.

The Model II

- At each t, the debtor and the two creditors must decide whether or not to settle.
- If both the debtor and at least one creditor agree to settle, then one of the two creditors is chosen at random to bargain with the debtor and bargaining proceeds according to alternating offers bargaining.
- Once an agreement has been reached, the creditor exits the process.
- All our results are stated at the continuous time limit as $\Delta t \rightarrow 0$.

RUFO Clause

- A lock-law (the RUFO clause) bans any improved offer to the other creditor for T periods (derived as part of the equilibrium calculations).

- At *T*, the remaining creditor and the debtor must choose whether or not to settle.

- Once both the debtor and the creditor choose to settle, bargaining proceeds as before.

- Bargaining surplus (gains to debtor from re-accessing capital markets) normalised to one.

Delay

- Any PBE must involve delay.

- Creditor heterogeneity is crucial for obtaining equilibrium delay.

- If both creditors are identical, then there will be no delay in the continuous time limit as $\Delta t \to 0$.

Perfect Bayesian Equilibria

- We focus on Perfect Bayesian Equilibria where strategies and beliefs are configured so that

(i)   the debtor and the exchange bond holder choose to settle immediately and agree to a split,

(ii) after the specified period of waiting time T implied by the lock law clause lapses, the debtor and the holdout creditor choose to settle immediately and agree to a split.

- Costly signalling but no coordination failure

Splitting the bargaining surplus

- After *T>0* quantum of waiting time, there is only one creditor present so that given the initial offer s_X which has been accepted by the exchange bondholder, the bargaining surplus left is $1 - s_X$.

- At this point, a complete information bargaining game between the debtor and the holdout: at the continuous time limit, immediate agreement where

$$s_H = \frac{\delta_D}{\delta_D + \delta_H}(1 - s_X).$$

Creditor payoffs

- At *t=0*, the offer made by the debtor to the exchange bond holder (immediately agreed to) is $s_X = \frac{\delta_D}{\delta_D + \delta_X}(1 - s_H)$ (anticipate that s_H will be committed to the holdout creditor).
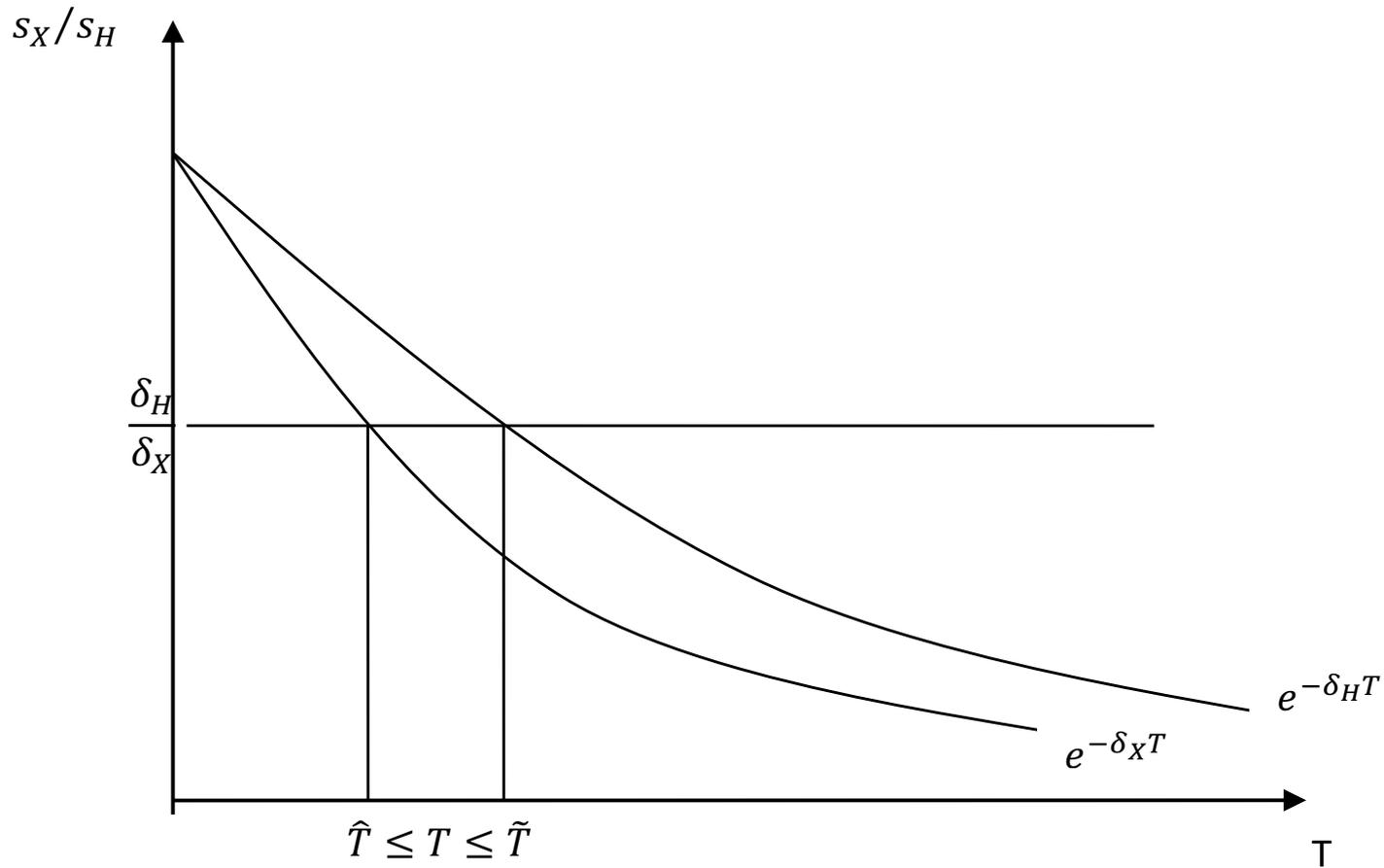
- $s_X = \frac{\delta_D \delta_H}{\delta_D(\delta_X + \delta_H) + \delta_X \delta_H}$,

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Equilibrium waiting time

- $s_H\, e^{-\delta_X T} \leq s_X$:the exchange bondholder will choose not to settle late;

- $s_H\, e^{-\delta_H T} \geq s_X$: the holdout doesn't want to deviate by settling early.

- $\tilde{T} > 0$ is the solution to $s_H\, e^{-\delta_H T} = s_X$.

- $\hat{T}$ be the solution to the equation $s_H\, e^{-\delta_X T} = s_X$.

- Equilibrium waiting time $T \in \left[\hat{T}, \tilde{T}\right]$.

Equilibrium Timing

Comparative Statics and Second-Best

- As $\delta_H \to 0$, both $\hat{T}, \tilde{T}$ are both increasing and $s_X \to 0, s_H \to 1$

- At the second-best equilibrium, $T = \hat{T}$ (the constrained efficient RUFO clause).

- Other PBE outcomes as well e.g. neither the debtor nor the creditor chooses to settle before for $T'>0$ quantum of time has elapsed; at T' periods, the debtor settles with the exchange bondholder and after $T \in [\hat{T}, \tilde{T}]$ periods, settles with the holdout creditor.

Calibration

No Delay Benchmark: $\delta_D = \delta_X = \delta_H = 0.05$

	$\hat{T}$	$\tilde{T}$	s_X	s_H	s_D
$\delta_H = 0.045$	2 years	2.5 years	0.32	0.36	0.32
$\delta_H = 0.04$	4.5 years	5.5 years	0.31	0.38	0.31
$\delta_H = 0.035$	7 years	10 years	0.29	0.42	0.29
$\delta_H = 0.03$	10 years	17 years	0.275	0.45	0.275
$\delta_H = 0.025$	14 years	28 years	0.25	0.5	0.25
$\delta_H = 0.015$	24 years	80 years	0.1875	0.625	0.1875
$\delta_H = 0.005$	46 years	460 years	0.08333	0.8333	0.08333

Calibration: Illustration
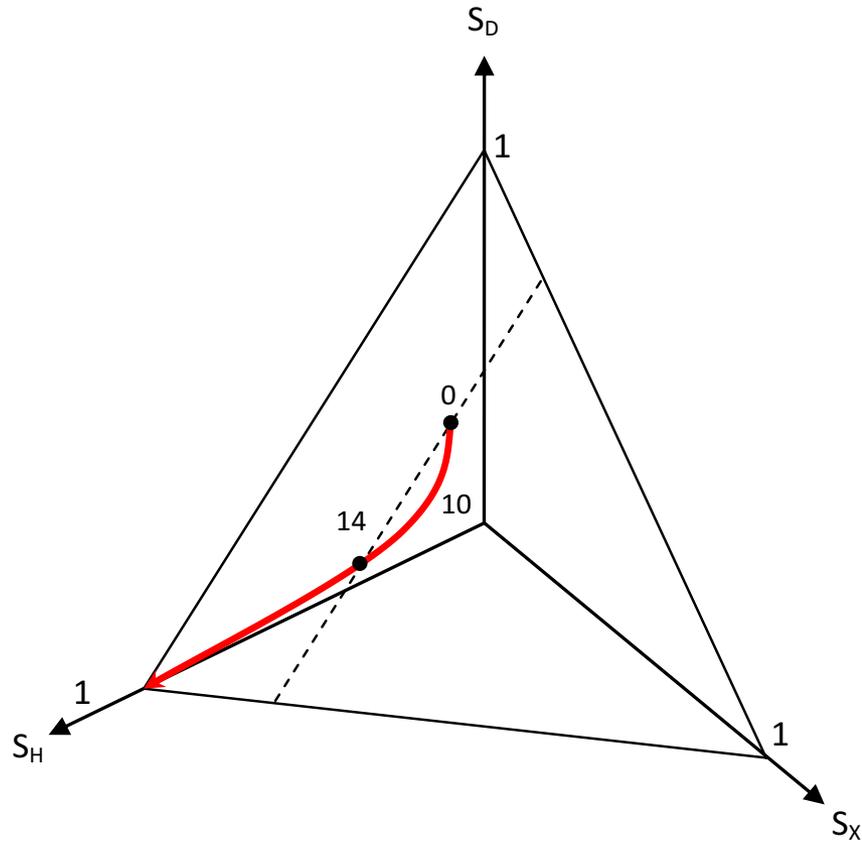
Endogenous holdouts

- What if the participation of the holdouts is *endogenous*, as implied by the widespread use of the term 'vulture' funds?

- Negative externality: By buying out an exchange bondholder, the vulture fund will be able to recover a greater portion of the debt but in the process generate costly delay (with the possibility of coordination failure) and reduced debtor (and in some cases, exchange bondholder) shares in the bargaining game.

Handling holdouts I: Existing Initiatives

- Inclusion of *new 'aggregation' clauses* in CACs that would be to allow a Super Majority of *all bond holders* to over-rule the holdouts in accepting a restructuring.

- A boiler-plate for CACs modified in this respect has been prepared by ICMA, endorsed by the International Monetary Fund, see IMF(2014), and has already been included in new bond issues by significant sovereign borrowers such as Mexico.

- Search to find *substitutes for US-law bonds* now subject to the precedent of judge Griesa's ruling e.g. dollar bonds issued in other jurisdictions (J. Stiglitz) or under local law (as proposed by S. Soler).

Handling holdouts II: Other Initiatives

- Institutional change at a regional level – with European Treaty changes which protect the claims of creditors who are engaged in good faith negotiations, an initiative discussed in Miller and Thomas (2013).

- Revive the idea of a *Sovereign Debt Restructuring Mechanism* at a global level, as in the development of an international bankruptcy court, an initiative currently being considered by the UN.

- Development of '*soft law*' where anti-social practices are branded as such, with attendant reputational costs - and possible reverse discrimination.

Good cases make bad law: the Argentine debt swaps

- Argentina did implement a RUFO clause - one that expired at the end of 2014.

- But there are two subsequent developments at variance with the simple bargaining model we propose:

(a) a delayed – and relatively successful – swap was effected in 2010, well before the expiry of the RUFO clause (evolving bargainng surplus);

(b) despite the lapse of the clause - meaningful negotiations with the remaining holdouts have never really started; and there is no resolution yet in sight (three or more types, aggressive bargaining).