

Leader Reputation and Default in Sovereign Debt

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(Work in Progress)

Introduction

- The question of whether reputational concerns are sufficient to sustain repayment incentives for sovereign borrowers is a long standing one.
- Eaton and Gersovitz (1981), Bulow and Rogoff (1989), Cole and Kehoe (1992): debate on whether reputational incentives were sufficient to prevent strategic default in the absence of an external enforcement mechanism.
- Main conclusion from this literature: either incomplete information needed to build reputation to prevent default or lenders have limited commitment and limited ability to offer deposit contracts (Kletzer and Wright, 2000).

- A basic assumption of the reputational models is that there is one leader who is essentially "the country" and reputation always attaches to the country.
- Incentives to repay come from the need to have access to lending in the future.
- If lenders willing to lend even after default if leader is replaced, then the efficacy of the reputational mechanism is in question once again.
- What happens when leaders can be replaced? Are democracies and autocracies different in their incentives to default? Does it matter?

- Lenders care about the leader than the country and so do rating agencies:

” The prospect of a Lula victory has terrified the financial markets. Brazils currency, the real, has fallen sharply against the American dollar and the risk premium on Brazilian government bonds –the amount by which rates exceed those on American Treasury bonds–has soared.”

"Mr da Silva insists that once his victory is assured the financial crisis will subside: that would require the risk premium on government bonds to drop back, and the real to stabilise, or appreciate. That may happen, but it seems highly unlikely. Like many left-wing leaders, who tend to be regarded with suspicion by the markets, Mr da Silva is likely to have to work hard to establish his credibility." – "Running out of Time,"

The Economist, October 3, 2002.

- When assessing a country's willingness and ability to service its debt, rating agencies will generally take into consideration a country's political risk and economic risk. Political risk assessment evaluates a country's underlying political and social stability, which impacts the central government's willingness to meet its debt obligations. The main criteria used include the characteristics of a political system, executive leadership, government institutions, social coalitions, social indicators, and external relations. (Pukthuanthong-Lea, Elayan and Rose, Global Finance, 2007)

- A recent and emerging literature recognizes the fact that there may be a link between political turnover and default incentives:
- Perception of creditworthiness depends on frequency of regime change (Brewer and Rivoli (1990)) (negative relationship)
- Bordo and Oosterlink (2005) analyze the gold standard period (1880-1913) for 29 countries and study whether defaults are linked to political turnover. They find that average (over 33 years) political instability in defaulting countries is not much higher than non defaulting countries.

- Saiegh (2004), (2005) studies 43 countries from 1971-1997, but concludes that being a democracy is insufficient to predict default. He compares countries which have multi-party coalitional governments with single party governments and finds that the former have lower default rates.
- Theory is that multi party coalitions prevent redistributive transfers from asset holders to tax payers (assuming that if international debt is repudiated then at some point it induces a transfer among the domestic agents).
- McGillivray and Smith (2003) (henceforth MS) compare democracies and autocracies for default risk and fluctuations in bond prices. Higher fluctuations in non democracies.

- The Political Science literature (e.g. Shultz and Weingast (2003)) suggests that democrats can commit themselves more easily: democracies get larger loans at lower rates of interest than autocracies: this is because of better accountability.
- Amador (2003): Turnover positively related to repayment: in equilibrium there is over spending by leaders because of replacement, hence they need to be able to borrow if they ever come back to power: in each period there is an exogenous probability of replacement and all parties have an equal chance...reputation for repayment attaches to the country.

- MS (2005): main result is that when leaders are easily replaced then default is lower and hence the risk premium is low. Moreover volatility of interest rates is low because individual leaders reputation is not important : Ego rents cause democratic leaders to repay when autocrats do not.
- So: overall conclusion in theory comes out in favour of democracies: higher turnover associated theoretically with lower default, lower risk premia, lower volatility.
- Empirically: results on turnover and default seems to be mixed.

- In this paper, we build on MS (2005), who focus on the accountability in democracies that comes from turnover.
- Question: Given a competitive credit market where reputation attaches to leaders, types of leaders are unknown to creditors, and state contingent contracts are impossible due to moral hazard, what is the most efficient feasible contract in democracies vs autocracies?
- Our results highlight the moral hazard problem that arises in democracies due to leader replacement: we show in contrast to previous results that democracy is not always good for repayment relative to dictators.

- However this is good: democracies are able to implement more efficient contracts: they are able to shift risk between periods.
- Secondly, in contrast to MS (2005) we show that increasing incentives to stay in office may not imply lower default but rather higher default if contracts have to be feasible and incentive compatible...
- Our results depend on parameters: in keeping with the mixed empirical results. More detailed predictions may help.
- Our results may also explain the relatively loose empirical connection between default and output shocks as pointed out recently by Wright and Tomz (2004)

Model: simplest one that captures the differential incentives (between democracies and autocracies) to build a reputation for repaying debt to ensure future access to credit in the presence of moral hazard.

- Assumption: No state contingent contracts possible because of the moral hazard problem.
- Without moral hazard the optimal contract would allow the debtor to repay nothing in the first period when there are bad shocks and just increase the premium in the second period - optimal intertemporal risk sharing.

- However: when there are foreign creditors the government has an incentive not to repay even in good states – good type only cares about own citizens.
- Hence repayment must take place...we do not allow partial repayments in the contractthat would capture re-negotiation.

- Given that there is no re-negotiation allowed, either payment in full or not at all. So, the difference between democracies and autocracies is captured in the differential probabilities of repayment when there is a bad shock. The inefficiency comes from the repayment in bad times. The higher the threshold the more inefficient the contract. Idea is to show that democracies can provide more efficient contracts than dictatorships.

Model

- One borrower country: democracy (leaders can be replaced) or autocracy.
- Continuum of identical citizens (except on leadership quality) normalized to size 1. Candidate chosen from here.
- Two types of leaders: (Kreps and Wilson, Milgrom and Roberts (1982), Cole and Kehoe (1992): reputation models)
 - Good or normal type, probability $1 - \epsilon$.
 - "Bad" type – "impatient kleptocrat" or "clientelist" with probability ϵ

- Two periods: access to investment project of size q_t dollars, which generates income $(1 + \rho)q_t$ for the representative citizen.
- Assumption: in the last period the loans *must* be repaid to domestic creditors. The "good" type is not interested in defaulting on its own citizens.
- E.g. if bondholders are self selected then they are politically powerful (Dixit and Londregan 1998) so the leader (or parliament) chooses to repay in equilibrium.
- This captures the essence of an infinite horizon game between creditors and the government, where there are incentives to build a reputation to repay to ensure future access to credit.

Model

- First period time line:
 - First period: representative citizen receives endowment $w_1 = 0$. (we need $w_1 < q_1$, so foreign lenders needed)
 - Rate of interest is r_1 . Debt = $(1 + r_t)q_t$
 - After the project is implemented there is a stochastic shock, $\lambda \in [0, 1]$ observed by all citizens.
 - The shock alters the shadow value of money for the government: a dollar tax revenue costs $(1 + \lambda)$ to citizens.
 - After observing the shock, the incumbent leader decides whether to repay or not.

- After observing the repayment decision there is an election, citizens decide whether to replace the leader or not. In an autocracy there is no election.

- Second period time line:
 - In period 2, the representative citizen receives an endowment $w_2 \geq q_2$ –it is feasible to finance the second-period project by borrowing from the representative citizen.

 - Government debt including interest is $(1 + r_2)q_2$.

 - We will assume for simplicity that there are no shocks in period 2,

 - No commitment problem in period 2: domestic bondholders

The Perfect Bayesian Equilibria

Let E denote the ego-rents from holding office to leaders. Interpreted as the perks of office which might be different in developing countries than developed countries.

We assume that the bad type never repays.

We look for equilibria with thresholds: if the shock is sufficiently bad then the good type does not repay. $F(\hat{\lambda})$ is the probability that the good type repays. Citizens can observe λ hence they know that if $\lambda \leq \hat{\lambda}$ the good type always repays (and is re-elected), while bad type never repays and is replaced.

The beliefs are given by a separating equilibrium when $\lambda \leq \hat{\lambda}$ and a pooling equilibrium when $\lambda > \hat{\lambda}$.

Assumption 1. $\rho > 1$ and $E > 2q_1$.

There is no equilibrium with positive lending if A1 is violated.

Assume uniform distribution:

Proposition 1: Suppose $E \geq (1 + \rho)q_1$. In the most efficient equilibrium for the democracy, the good type repays whenever $\lambda \leq \frac{1}{(1-\epsilon)(1+\rho)-1}$. The interest rate is $r_1 = \rho - \frac{1}{1-\epsilon}$.

As ρ increases, $\hat{\lambda}$ decreases: repayment probability falls and rate of interest increases.

Proposition 2: Suppose $E < (1 + \rho)q_1$. In the most efficient equilibrium for the democracy, the good type repays whenever $\lambda \leq \frac{q_1}{(1-\epsilon)E-q_1}$. The rate of interest is $\frac{(1-\epsilon)(E-q_1)-q_1}{q_1(1-\epsilon)}$

As E increases, the probability of repayment decreases and rate of interest increases:

Intuition

Zero Profit condition: $(1 - \epsilon)F(\hat{\lambda})(1 + r_1)q_1 = q_1$

So, $1 + r_1 = \frac{1}{(1 - \epsilon)F(\hat{\lambda})}$: as $\hat{\lambda}$ increases, r_1 falls.

The two constraints are:

(1) Feasibility: $(1 + \hat{\lambda})(1 + r_1)q_1 \leq (1 + \rho)q_1$ i.e.

$$\frac{\hat{\lambda}}{1 + \hat{\lambda}} \geq \frac{1}{(1 - \epsilon)(1 + \rho)} \quad (1)$$

(2) Incentive Compatibility: i.e. the good type should repay when the state is below $\hat{\lambda}$:

$$\begin{aligned} & (1 + \rho)q_1 - \lambda(1 + r_1)q_1 + E + (1 + \rho)q_2 - (1 + \tilde{r}_2)q_2 \\ \geq & (1 + \rho)q_1 + (1 + \rho)q_2 - (1 - \epsilon)(1 + r_2)q_2 \end{aligned} \quad (2)$$

where $1 + r_1 = \frac{1}{(1-\epsilon)F(\hat{\lambda})}$ and $r_2 = \frac{1}{1-\epsilon}$ (since the defaulting leader is always replaced and good type always repays in last period). Conditional on repayment the rate of interest in period 2 is $\tilde{r}_2 = 0$.

(2) implies

$$E - (1 + \lambda)(1 + r_1)q_1 \geq 0 \quad (3)$$

This defines $\hat{\lambda}$. Plugging in $1 + r_1$:

$$\frac{F(\hat{\lambda})}{1 + \hat{\lambda}} \geq \frac{q_1}{(1 - \epsilon)E} \quad (4)$$

- It is these two inequalities that give Propositions 1 and 2: depending on which condition is binding.
- Proposition 2 is counter-intuitive: If the ego rent is smaller the probability of default is smaller!
- This is because as ego rents are low, then the leader has a strong incentive to default, so that risk premium is higher which increases even more his incentive to default. To make him repay therefore the premium must be low, hence default must be low.
- Notice that citizens have access to new lending if the leader is replaced after default in a democracy so the only cost of default is ego rent.

Dictatorship

Assumption 2. $2q_1 < \rho q_2$.

No equilibrium with positive lending if A2 is violated.

Proposition 3: Suppose $q_1 \leq q_2$. In the most efficient equilibrium for the dictatorship, the good type repays whenever $\lambda \leq \frac{1}{(1-\epsilon)(1+\rho)-1}$. The interest rate $r_1 = \rho - \frac{1}{1-\epsilon}$.

Proposition 4: Suppose $q_1 > q_2$. In the most efficient equilibrium for the dictatorship, the good type repays whenever $\lambda \leq \frac{q_1}{(1-\epsilon)\rho q_2 - q_1}$ and the rate of interest is $r_1 = \frac{\rho q_2 - 2q_1}{q_1}$

- The interesting part is the IC constraint for the dictator, as everything else is the same:

$$(1+\rho)q_1 - (1+\lambda)(1+r_1)q_1 + E + (1+\rho)q_2 - (1+\tilde{r}_2)q_2 \geq (1+\rho)q_1 + E \quad (5)$$

where $\tilde{r}_2 = 0$ since once he repays, he reveals he is the good type.

This is equivalent to:

$$\rho q_2 - (1+\lambda)(1+r_1)q_1 \geq 0$$

- The only incentive for the dictator to repay the first-period loan (conditional on $\lambda \leq \hat{\lambda}$) is that if he doesn't, he will be considered the bad type, and will not be able to get a loan in period 2.
- Again proposition 4 is counter-intuitive because as the value of next period project (value of reputation) goes up, the default rate increases!

Comparison

- If $E \geq (1 + \rho)q_1$ and $q_1 \leq q_2$ the dictatorship and democratic country default the same amount at the same interest rate. If the defaulting leader is bad, democracies better off.
- If $E \geq (1 + \rho)q_1$ and $q_1 > q_2$. I.e. when ego rents are high and the project size shrinking over time, the dictator defaults less often and pays a lower interest rate than the democratic leader.
- If $E < (1 + \rho)q_1$ and $q_1 < q_2$, i.e. when ego rents are low and the project size increasing over time, the dictator defaults more often and pays a higher interest rate.

- If $\rho q_2 < E < (1 + \rho)q_1$ and $q_1 > q_2$ then dictators default less often than democratic leaders.

Hence results are more nuanced in the equilibrium, than suggested by previous literature.

Conclusions and Extensions

- The punishment mechanism for non-repayment is usually the freezing of credit by lenders. When reputation attaches to the country rather than the leader there is no difference between democracies and dictatorships.
- However when reputation is leader specific, then this creates a wedge between the two.
- Unambiguous result: inter-temporal risk allocation is better in democracies.

- Speaks to the debate on whether to forgive defaults (IMF) when economic conditions are hard. In democracies defaults are forgiven by lenders because democracies allow replacement of leaders.

- Tomz and Wright (2007): find a weak relationship between default and bad output shocks than predicted by the theory.
- Our paper offers an explanation: if the sovereign debt market is characterized by competitive lending and heterogeneous creditors then state contingent contracts (even implicit ones) may not be possible. So, default is a costly way to ensure partial insurance. However, in democracies, default is not that costly because leaders can be replaced. Hence default may not be so tightly associated with bad shocks.
- Predict that relationship is tighter for dictatorships.
- Extend to allow partial default or renegotiation.