Leader Reputation and Default in Sovereign Debt*

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Abstract

This paper compares default incentives in competitive sovereign debt markets when leaders can be either democratically elected or dictators. When leaders can be replaced as in democracies, the incentives for repayment are mainly the ego rents from office and the possibility of getting a corrupt leader from replacement. In a dictatorship, on the other hand, the cost of not repaying loans is the permanent loss of reputation and the loss of future access to credit. There is a trade off between repayment and risk sharing. We show, counter-intuitively, that when ego rents are low, and value of reputation to dictators is high, then democracies repay more often and have lower risk premia than dictatorships.

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1 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) were seminal papers on the debate of whether reputational incentives were sufficient to prevent strategic default in the absence of an external enforcement mechanism. The main conclusion from this literature was that either incomplete information was 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 and incentives to repay come from the need to have access to lending in the future. However, 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? Our paper addresses this issue.

There is much evidence to suggest that indeed lenders care about the leader than the country and so do rating agencies, e.g the following quotes taken from the Economist illustrate this:

"The prospect of a Lula victory has terrified the financial markets. Brazil’s 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 empirical literature recognizes the fact that there may be a link between political turnover and default incentives e.g Brewer and Rivoli (1990) show that perception of creditworthiness is negatively correlated with the frequency of regime change. 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 that 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. His 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. They find 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. Other theoretical papers (Amador (2003), MS (2003)) come out in favour of democracies. So: overall conclusion in theory comes out in favour of democracies: higher turnover associated theoretically with lower default, lower risk premia, lower volatility. Empirically on the other hand, 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. Our main question is: 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 (higher ego rents) may not imply lower default but rather higher default if contracts have to be feasible and incentive compatible. Third, autocracies repay because of the value of reputation rather than ego rents.

Our results depend on comparisons between autocracies and democracies are more nuanced and depend on parameters: this is in keeping with the mixed empirical results. Our results may also explain the relatively loose empirical connection between default and output shocks as pointed out recently by Wright and Tomz (2004). Our paper speaks to the debate on whether to forgive defaults when economic conditions are hard: we show democracies have an in built mechanism to do this which dictatorships do not.
2 The Model

The country has a set of identical citizens, normalized to size one. There are two periods, \( t \in \{1, 2\} \). At the beginning of each period, an indivisible public project is available. The cost of the period \( t \) project is \( q_t \) dollars. The project generates a benefit \( y_t > q_t \) for the representative citizen. There is no discounting.

The leader of the country is a “good” type with probability \( 1 - \varepsilon \), and a “bad” type with probability \( \varepsilon \). His true type is his private information. If the leader is a good type, then his interests are aligned with the representative agent in the economy, but he also get Ego rents \( E \) from being in office. We can interpret this to mean that the good leader is the representative citizen of the country, who gets the same payoff as other citizens, plus the rents from office. However, with a small probability \( \varepsilon > 0 \), the leader is a “bad” type who never repays any loan.\(^1\) The existence of “bad” types makes reputation building possible: by repaying a loan in period 1, the leader proves conclusively that he is not the bad type, which helps him get a loan in period 2. Notice that \( \varepsilon \) can be arbitrarily small without changing any results.

\(^1\)Building on the literature of repeated games with incomplete information, Cole and Kehoe (1992) discuss how incomplete information about the leader’s type is required for reputation building. Our formulation, where the “bad type” is defined by the fixed action he takes (always default), is the simplest of this kind. In a more elaborate model, bad leaders might use government revenue for targeted benefits to core supporters who are poor and against any repayment of debt to foreign creditors. In this alternative model, the difference between good and bad types is essentially that one is interested in the representative agent while the other is interested only in core supporters. As long as the bad leader always finds it in his interest to defaul, the results would be the same as for our simpler model.
2.1 Period 1

The country’s citizens have no loanable funds in period 1, so implementing the first period project requires a loan of $q_1$ dollars from foreign lenders.\footnote{Nothing changes if the citizens have loanable funds in period 1, as long as the amount is less than $q_1$, so they still must borrow from abroad.} At the end of period 1, there is a stochastic shock $\lambda$ to the economy. The cumulative distribution is $F$. The support of $F$ is an interval $[\lambda_0, \lambda_1]$ We refer to $\lambda$ as the state of the world. We assume that $\lambda$ is observable, so the loan contract can be state-contingent. A state-contingent contract specifies that the country must repay $R(\lambda)$ at the end of period 1. Because no international court of law can force the country to honor the contract, the contract must be incentive compatible: the good leader must be willing to voluntarily repay $R(\lambda)$ in state $\lambda$. Since the bad type never repays anything, the expected repayment in state $\lambda$ is $(1 - \varepsilon)R(\lambda)$ We assume that the international credit market is competitive, and the foreign lenders must expect to make zero profit. Since there is no discounting, the lender’s zero profit condition is

$$\int_{\lambda_0}^{\lambda_1} (1 - \varepsilon)R(\lambda)dF(\lambda) = q_1$$  \hspace{1cm} (1)

If in state $\lambda$ the leader pays strictly less than $R(\lambda)$, we will say that he defaults on the loan. It will be clear from the construction of the optimal contract below that if the defaults, his best option is to pay nothing at all. Thus, without loss of generality, from now on we assume that the leader either repays $R(\lambda)$ at the end of period 1, or defaults and pays nothing.

The state $\lambda$ determines the shadow value of money: making a repayment of $R$ costs the representative citizen $\lambda R$ dollars. Thus, high values of $\lambda$ represent negative shocks to the economy. Since the shadow value of a dollar is at least a dollar, $1 \leq \lambda_0 < \lambda_1$.\footnote{Nothing changes if the citizens have loanable funds in period 1, as long as the amount is less than $q_1$, so they still must borrow from abroad.}
2.2 Period 2

At the beginning of period 2, the representative citizen receives an endowment $w_2$. Because the model has only two periods, the second period is by necessity quite different from the first. Since there is no period three, there is no point in building a reputation in period two, so there is no reason to repay foreign bond-holders. Therefore, in the second period, borrowing can only be from domestic agents. (The model is easily extended to many periods, where the reputation motive operates in all periods except the last). To make lending possible in period 2, we assume $w_2 \geq q_2$, so the representative citizen has enough loanable funds in to finance a public project in period 2. We will assume for simplicity that there are no shocks in period 2, and the shadow value of a dollar at the end of period 2 is one. Under these assumptions, second-period behavior becomes straightforward. The “good” leader is perfectly willing to repay since the bond-holder is the representative citizen, i.e., the leader himself. The bad leader surely defaults.

2.3 Replacing the leader

In Section 3.1, we derive the optimal contract under the assumption that the first-period leader always remains the leader in period 2. This might corresponds to a dictatorship, with a long-lived dictator. In Section 3.2, we assume instead that the representative citizen can replace the first-period leader by a new leader after period 1, corresponding to a “democracy”. The representative citizen strictly prefers to replace the first-period leader when he reveal himself to be bad (by defaulting), because the bad leader will not get any loan in period 2. The new leader, however, is “good” with probability $1 - \varepsilon$ and is able to get a loan.
3 Optimal contract

3.1 No replacement of leader

In this Section, we assume the leader cannot be replaced after period 1.

The incentive compatibility constraint requires that, in each state \( \lambda \), the good leader prefers to repay \( R(\lambda) \), at a cost \( \lambda R(\lambda) \), rather than defaulting and paying nothing. The incentive to repay comes from the value of his reputation: if he fails to repay he will be believed to be a bad type, and nobody will lend to him in period 2. If he repays \( R(\lambda) \), in period 2 he will be able to borrow \( q_2 \) from the representative citizen, and implement a second-period project, which yields a net benefit \( y_2 - q_2 \). Accordingly, the incentive-compatibility constraint is

\[
\lambda R(\lambda) \leq y_2 - q_2
\]

for all \( \lambda \).

Clearly, it is optimal to pay as much as possible in good states where \( \lambda \) is low, and as little as possible in bad states where \( \lambda \) is high. In view of the IC constraint (2), the optimal contract will have the following form. There is a cut-off point \( \hat{\lambda} \), such that \( R(\lambda) = (y_2 - q_2) / \lambda \) for \( \lambda \leq \hat{\lambda} \), and \( R(\lambda) = 0 \) for \( \lambda > \hat{\lambda} \). With this contract, the lender’s zero-profit constraint (1) can be written as

\[
\int_{\lambda_0}^{\hat{\lambda}} \frac{1}{\lambda} dF(\lambda) = \frac{q_1}{(1 - \varepsilon) (y_2 - q_2)} \quad (3)
\]

This equation determines cut-off point \( \hat{\lambda} \). For example, if \( \lambda \) is uniformly distributed on \([1, \lambda_1]\), then equation (3) yields \( \hat{\lambda} = \exp \left\{ \frac{q_1 (\lambda_1 - 1)}{(1 - \varepsilon)(y_2 - q_2)} \right\} \).

**Proposition 1** When the leader cannot be replaced, the optimal contract specifies \( R(\lambda) = (y_2 - q_2) / \lambda \) for \( \lambda \leq \hat{\lambda} \), and \( R(\lambda) = 0 \) for \( \lambda > \hat{\lambda} \), where \( \hat{\lambda} \) is implicitly defined by (3).
Notice that the repayment $R(\lambda)$ is maximal in the best state, $\lambda_0$. If we interpret $B \equiv R(\lambda_0) = (y_2 - q_2)/\lambda_0$ as the face value of the debt, then there is partial forgiveness of the debt whenever $\lambda$ is such that $\lambda_0 < \lambda \leq \hat{\lambda}$. In these states, the good leader’s repayment $R(\lambda)$ satisfies $0 < R(\lambda) < B$. If the state is very bad, $\lambda > \hat{\lambda}$, then the lenders forgive 100% of the debt.

This contract is optimal because it allows the country to repay nothing in as many bad states as possible. The primary motivation is risk-sharing: by definition, it is very costly for the country to repay in bad states. There is also a secondary motive. With probability $1 - \varepsilon$, the leader is bad. If $\lambda \leq \hat{\lambda}$, the country is supposed to repay $R(\lambda) > 0$; but the bad leader defaults and pays nothing, then gets no loan in period 2. Thus, the representative citizen loses the net benefit $y_2 - q_2$. If $\lambda > \hat{\lambda}$, however, the debt is forgiven, so the bad type is not revealed, and gets a new loan in period 2. By assumption this is invested in new project. Thus, to minimize the risk of losing the benefit $y_2 - q_2$ the debt should be forgiven in as many states as possible. However, this motive is secondary because the benefit is proportional of $\varepsilon$, which we assume is very small.

A low cut-off $\hat{\lambda}$ means the risk-sharing is very good, because repayment occurs only in good states. From (3), $\hat{\lambda}$ is increasing in $q_1$ and decreasing in $y_2 - q_2$. Intuitively, it is obvious that if the loan size $q_1$ increases, the country must repay more often to allow foreign lenders to break even. Thus, $\hat{\lambda}$ increases in $q_1$. Also, notice that the good leader’s incentive to repay is that he cares about his reputation: if he is believed to be a bad type, he will not be able to borrow money in period 2. The second period loan is worth $y_2 - q_2$. When the leader cannot be replaced, the value of his reputation is simply the value of the future loan that he will forego if his reputation is bad. If $y_2 - q_2$ increases, his incentive to repay the loan goes up. Therefore, it is incentive-compatible to repay more in good states. This makes it possible to reduce the repayment in bad states, thus improving risk-sharing.
3.2 Optimal contract when the leader can be replaced

The contract of Section 3.1 breaks down if the representative citizen can replace the leader between periods 1 and 2. The reason is that if the leader defaults when the state is good ($\lambda \leq \hat{\lambda}$), he is known to be bad. This prevents him from getting a second period loan, and no second period project is implemented. In this case, the representative citizen prefers to replace the leader. However, if the good leader knows that he will be replaced if he defaults, his incentive compatibility condition changes. In this section, we derive the new incentive compatibility condition.

Suppose the representative citizen can replace the leader between periods 1 and 2. From the argument in the previous paragraph, if $R(\lambda) > 0$ but the leader defaults, he will be replaced and will lose his second period ego rents $E$. Consider the the good leader’s incentive to repay $R(\lambda) > 0$ at a cost $\lambda R(\lambda)$. If he defaults, he is replaced and loses the ego rents $E$. Accordingly, the leader prefers to repay if and only if

$$\lambda R(\lambda) \leq E$$

(4)

which is the new incentive-compatibility condition. By the same argument as in Section 3.1, the optimal contract will have the following form. There is a cut-off point $\lambda^*$, such that $R(\lambda) = E/\lambda$ for $\lambda \leq \lambda^*$, and $R(\lambda) = 0$ for $\lambda > \lambda^*$. The cut-off point $\lambda^*$ is determined by the lender’s zero-profit constraint,

$$\int_{\lambda_0}^{\lambda^*} \frac{1}{\lambda} \, dF(\lambda) = \frac{q_1}{(1-\varepsilon) E}$$

(5)

Proposition 2 When the leader can be replaced, the optimal contract specifies $R(\lambda) = E/\lambda$ for $\lambda \leq \lambda^*$, and $R(\lambda) = 0$ for $\lambda > \lambda^*$, where $\lambda^*$ is implicitly defined by (5).
Comparing (3) and (5), we find that if $E < y_2 - q_2$ then $\lambda^* > \hat{\lambda}$. Thus if ego rents are small, risk sharing is worse when the leader can be replaced (repayment occurs in worse states). On the other hand, the second period project is always implemented when the leader is replaced upon default. The welfare comparison between the two cases depends on the relative importance of these effects. The second effect is unimportant when $\varepsilon$ is small, however.

If $E > y_2 - q_2$ then $\lambda^* < \hat{\lambda}$. In this case, the representative agent is unambiguously better off when he is able to replace the leader.

If ego rents are low, then lenders are more likely to completely forgive the debt for a dictator than for a democratically elected leader. This result has a simple intuition. If ego rents are low, then the democratically elected leader has a strong temptation to default on the debt, since all he loses are his ego rents. To prevent the good leader from defaulting, the face value of the debt $B = E/\lambda_0$ is quite low. But with such a low face value, the lenders insist on (at least partial) repayment in very many states in order to break even.

The Model is the 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.

4 Conclusion and Extensions

In this paper we considered the problem of repayment of sovereign debt akin to the usual Principal Agent problem with moral hazard. The optimal contract takes the form of punishing the agent by firing him when the observed output is low (e.g. Efficiency wages, Shapiro and Stiglitz, 1984). In democracies this punishment entails a re-election where the leader is replaced. The punishment therefore takes the form of a loss of Ego rents. When leaders also care about the welfare of citizens they may repay in order to prevent bad leaders from taking office. The higher turnover in a democracy compared to a
dictatorship implies that the repayment incentives are blunt especially when ego rents are low: there is a moral hazard problem created by the possibility that you could be replaced and get access to future credit because reputation attaches to a leader and not the country.

Shleifer (2003) suggests that the problem with sovereign debt is that lenders have too few rights: he gives the example of corporate bankruptcy law where Chapter 11 allows to fire a manager if he cannot propose a plan that is acceptable to them. We see democracies as offering a similar implicit contract where some alignment between the payoffs of citizens and lenders provides a similar mechanism to discipline leaders to repay. 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. We get an unambiguous result independent of the parameters: inter-temporal risk allocation is better in democracies. Hence our paper 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 heterogenous 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 occur even when shocks are not that bad. We predict that the relationship is tighter for dictatorships. Finally we would like to extend to allow partial default or renegotiation and to investigate further the volume of debt that a democracy has access to relative to an autocracy.
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