



Sovereign default, enforcement and the private cost of capital[☆]



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ARTICLE INFO

Article history:

Received 12 June 2014
Received in revised form 17 July 2015
Accepted 20 July 2015
Available online 31 July 2015

JEL classification:

E62
F30
F34
G15

Keywords:

Sovereign debt
Sovereign default
Reputation
Signaling
Interest rate
State capacity

ABSTRACT

This paper develops a signaling model for a small open economy in which the government's sovereign debt repayment decision gives lenders new information regarding the state's capacity to enforce contracts. Contract enforcement affects the expected repayment of private loans. Therefore, if lenders receive negative information from the sovereign default about the state's capacity to enforce contracts, they worsen the financial conditions offered to local firms, triggering a sharp reduction in credit and investment. The key contribution of this paper is to rationalize the worsened private-sector financial conditions observed after default episodes by modeling the price effect of the informational channel.

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1. Introduction

Emerging market economies face recurrent and costly sovereign defaults that have pernicious effects on investment, consumption and growth. One key channel through which sovereign defaults affect economic activity is the worsening of private firms' financial conditions.¹ In effect, recent empirical studies find a significant and economically relevant decline in financial conditions for the private sector after sovereign defaults with a consequent reduction in private credit.² In particular, Arteta and Hale (2008) find that the negative effect of default on private credit is greater than 20% of the country-specific average and that it lasts for more than two years. A priori, a negative effect of sovereign default on private credit could be explained by weakened fundamentals, banking crises and currency crises, which usually coincide with such defaults. However, it remains interesting that the negative effect on private credit is significant even after controlling for all these factors.

The key contribution of this paper is to rationalize the additional worsening of private-sector financial conditions after sovereign defaults by modeling the price effect of the informational channel. In particular, the paper develops a signaling model in which the

[☆] I am especially grateful to two anonymous referees and to the Editor Hamid Beladi for their constructive suggestions. I have also benefited from helpful comments from Piero Gottardi, Ramón Marimón, Russel Cooper, Arpad Abraham, seminar participants at the European University Institute, the Chilean Central Bank, the Universidad Torcuato di Tella, Oxford University and the Nederlandsche Bank. I also wish to thank DICYT Initiation Project 031462A.

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¹ The recent Euro Zone crisis has shown that developed countries have also become potential victims of sovereign defaults, making a better understanding of the phenomenon studied in this paper even more relevant.

² See Eichengreen and Mody (2000); Arteta and Hale (2008); Das et al. (2009); Trebesch (2009); Brutti (2011); Zymek (2012).

worsening of private-sector financial conditions is triggered by the new and negative information that the sovereign default reveals to the financial markets regarding the state's capacity to enforce contracts.

As [Besley and Persson \(2009, 2010\)](#) point out, economists have paid little attention to state capacity and how it affects the ability to tax and to support markets. Studies of optimal taxation implicitly assume a bureaucracy that is able and willing to enforce any tax policy respecting the informational constraints faced by the government. The same happens with private credit models: given certain creditor and property rights, the state is assumed to have the ability to enforce debt obligations between privates. However, assuming sufficient capacities to tax and support markets does not accurately reflect the experience of many countries. In line with this argument, in the paper, a lower state's capacity to enforce contracts tampers with the ability of the government to both tax entrepreneurs and enforce private debt contracts.

The model developed in this paper considers a small open economy that lasts for two periods. The economy is composed of a benevolent government that has private information regarding the state's capacity to enforce contracts and a continuum of identical entrepreneurs. In the first period, the government decides whether to repay or default on an exogenously inherited amount of sovereign debt. After the government repays or defaults, the entrepreneurs are allowed to borrow in the financial market. The interest rate that the entrepreneurs pay depends on the new information about the state's capacity to enforce contracts, revealed by the sovereign repayment/default decision. Finally, in the second period, the entrepreneurs decide whether to repay or default on their loans and consume.

The model can rationalize the worsened private-sector financial conditions observed after default episodes—conditions that cannot be explained exclusively in terms of weakened fundamentals, banking crises or currency crises. The key mechanism is the “updating effect” that the repayment decision has on the expected contract enforcement in the country. After a sovereign default, this purely informational mechanism triggers a discrete increase on the private interest rate and a sharp reduction in credit and investment. Two crucial features combine to generate the updating effect. The first is that lenders offer worse financial conditions to the private sector if they receive negative information about state capacity.³ This happens because lower expected state capacity reduces the expected repayment of loans. The second feature is that state capacity also affects the government's repayment decision, making the sovereign default informative.

Besides the updating effect, there is a second effect of the sovereign repayment decision on the private credit market: the “risk-transfer effect”, which is a combination of an informational effect and an actual transfer of resources. This effect is an indirect transfer of risk from the sovereign to the private sector that takes place through the taxes that the government needs to levy if it decides to repay the sovereign debt. These taxes indirectly affect the private sector's repayment ability. Therefore, as long as the government chooses to repay, the private interest rate grows with the level of sovereign debt. This effect is consistent with the empirical evidence found by [Agca and Celasun \(2012\)](#) that “a higher level of sovereign debt is associated with significantly higher corporate borrowing costs in emerging market economies.”

I conduct the analysis in a two-period framework in order to highlight the mechanisms generating the results while keeping the model tractable. In this framework, in spite of the finite-horizon setting and the absence of direct penalties, governments have incentives to repay their debt to avoid the negative consequences of sovereign defaults on private-sector financial conditions. Nevertheless, higher levels of sovereign debt and lower state capacity reduce these incentives, thus increasing the risk of sovereign default (e.g., [Reinhart, Rogoff, & Savastano, 2003](#); [Kraay & Nehru, 2006](#)).

In two subsequent extensions of the model, I allow for the level of sovereign debt and state capacity to be determined endogenously, generating a new series of interesting results. Endogenizing the sovereign debt enables me to characterize the sovereign interest rate in equilibrium. Consistent with empirical evidence, the resulting sovereign interest rate is increasing on the level of sovereign debt until a critical threshold at which credit rationing occurs (e.g., [Eaton & Gersovitz, 1981](#); [Zoli, 2004](#); [Arellano, 2008](#)). Then, the solution for the case with endogenous state capacity provides additional motivation for the government's private information and shows that more impatient governments tend to invest less in state capacity and to default with higher probability.

Additionally, I am able to provide a justification for the phenomenon of “debt intolerance” (e.g., [Reinhart et al., 2003](#)) by showing that countries with governments that are believed to have lower state capacity are able to sustain lower levels of sovereign debt. Finally, among the innovations in this paper is the possibility of showing that a government might have incentives to choose a partial default over a full default to avoid getting the stronger punishment associated with more aggressive defaults (e.g., [Das, Papaioannou, & Trebesch, 2009](#); [Trebesch, 2009](#)).

The remainder of the paper is organized as follows: In the next section, I present the related literature. [Section 2](#) presents the environment and describes the model. [Section 3](#) characterizes the possible equilibria and discusses the main results. [Section 4](#) discusses potential extensions of the model and their link with the empirical evidence and [Section 5](#) concludes.

1.1. Related literature

This paper contributes to the debate on the negative effects of sovereign defaults on the domestic economy, focusing specifically on the private credit channel. Most of the literature that analyzes the effects on the domestic economy focuses on the negative effect of sovereign defaults on the balance sheets of domestic agents that hold sovereign debt (e.g., [Guembel & Sussman, 2009](#); [Broner, Martin, & Ventura, 2010](#); [Gennaioli, Martin, & Rossi, 2014](#)). In particular, [Gennaioli et al. \(2014\)](#) analyze how domestic credit is affected by the

³ The quality of institutions, historical legal origins, state capacity, and government policies are widely recognized as direct determinants of the terms and quantity of credit available for and within a country (e.g., [Porta, Lopez-De-Silanes, Shleifer, & Vishny, 1997](#); [Djankov, McLiesh, & Shleifer, 2007](#); [Djankov, Hart, McLiesh, & Shleifer, 2008](#); [Alfaro, Kalemli-Ozcan, & Volosovych, 2007](#); [Alfaro, Kalemli-Ozcan, & Volosovych, 2008](#)).

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