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Voluntary sovereign debt exchanges

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ABSTRACT

We show that some recent sovereign debt restructurings were characterized by (i) the absence of missed debt payments prior to the restructurings, (ii) reductions in the government's debt burden, and (iii) increases in the market value of debt claims for holders of the restructured debt. Since both the government and its creditors are likely to benefit from such restructurings, we label these episodes as "voluntary" debt exchanges. We present a model in which voluntary debt exchanges can occur in equilibrium when the debt level takes values above the one that maximizes the market value of debt claims. In contrast to previous studies on debt overhang, in our model opportunities for voluntary exchanges arise because a debt reduction implies a decline of the sovereign default risk. This is observed in the absence of any effect of debt reductions on future output levels. Although voluntary exchanges are Pareto improving at the time of the restructuring, we show that eliminating the possibility of conducting voluntary exchanges may improve welfare from an ex ante perspective. Thus, our results highlight a cost of initiatives that facilitate debt restructurings.

1. Introduction

In sovereign debt restructurings the government swaps previously issued debt for new debt. This paper studies restructurings that are characterized by (i) the absence of missed debt payments prior to the restructurings, (ii) reductions in the government's debt burden, and (iii) increases in the market value of debt claims for holders of the restructured debt. Since both the government and its creditors are likely to benefit from such restructurings, we label these episodes as "voluntary" debt exchanges.[1]

We first show evidence that some recent sovereign debt restructurings fit within our definition of a voluntary debt exchange. We then show that a sovereign default model à la Eaton and Gersovitz (1981) can account for voluntary exchanges. Finally, we show that within our framework, and in spite of benefiting all parties involved at the time of the restructuring, voluntary debt exchanges are not always optimal for the government from an ex ante perspective.

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[1] Our definition of voluntary exchange should not be interpreted as indicating that the participation of all creditors in the exchange was strictly voluntary. First, it is difficult to determine the extent to which governments coerced bondholders into participating in a debt exchange (Enderlein et al., 2012; Zettelmeyer et al., 2012). Furthermore, even when a debt restructuring is beneficial for creditors as a group, individual creditors could benefit from free-riding on the participation of other creditors. For a discussion of collective action problems associated with debt restructuring see Wright (2011) and the references therein.

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Formally, we analyze a small open economy that receives a stochastic endowment stream of a single tradable good. The government is benevolent, issues long-term debt in international markets, and cannot commit to repay its debt. Sovereign debt is held by risk-neutral foreign investors. We extend this baseline model of sovereign default by allowing for voluntary debt exchanges. We assume that the cost of debt exchanges is stochastic and may be either low (zero) or high. The high cost is assumed to be high enough to prevent the government from launching a voluntary exchange. This assumption intends to capture difficulties in the implementation of voluntary exchanges. At the beginning of each period, the debt exchange cost is realized together with the endowment shock. When the cost is low, the government chooses whether to conduct a voluntary debt exchange. If the government conducts a voluntary exchange, the post-exchange debt level is endogenously determined as the outcome of a Nash bargaining game. If the government does not conduct a voluntary exchange, it decides whether to declare an outright default. An outright default is followed by a stochastic period of exclusion from capital markets and lower income levels while this exclusion lasts.

Why does debt relief lead to capital gains for the holders of restructured debt? In our model this occurs because lower debt levels reduce future default risk and thus increase the market value of the bond holders' debt portfolio. Fig. 1 shows the market value of debt as a function of the debt stock. If the state of the economy is represented by a point like *A*, a marginal decline of the debt level is more than compensated by an increase in bond prices, producing an increase in the market value of bond holders' debt portfolio. In this case, both the government and its creditors could benefit from a debt restructuring that reduces the debt stock (for example, to point *B*).

We show that our model can account for the frequency of voluntary debt exchanges suggested by the findings in Cruces and Trebesch (2013), while still accounting for other features of the data highlighted in the sovereign debt literature. Using a calibration for an archetypical emerging economy, opportunities for voluntary debt exchanges arise in 11% of the simulation periods. That is, in 11% of the simulation periods the initial debt level is higher than the debt level that maximizes the market value of debt claims. We show that those periods arise after sufficiently negative aggregate income shocks. However, an outright default does not need to be imminent in all those periods—i.e., the government would not necessarily default if the cost of conducting a voluntary exchange was high. The presence of voluntary exchanges in periods without an imminent default is only possible in our model because we allow the government to issue long-term debt.

Among voluntary debt exchanges that prevented an outright default in the period of the exchange, the average capital gain from holdings of the restructured debt is 141%. The sovereign enjoys an average debt reduction of 23% and an average welfare gain at the time of the exchange equivalent to a permanent consumption increase of 0.6%. Among voluntary debt exchanges conducted in periods in which the government would have chosen to stay current on its debt, the average capital gain is 6%, the average debt reduction is 7%, and the sovereign enjoys an average welfare gain equivalent to a permanent consumption increase of 0.2%.

In spite of the Pareto gains that result at the moment of a voluntary exchange, eliminating the possibility of conducting a voluntary exchange may improve welfare from an ex ante perspective. The anticipation of future voluntary exchanges leads lenders to offer lower prices for government bonds. This is costly for an impatient government that is eager to borrow. This finding highlights a cost of initiatives to facilitate sovereign debt restructurings.

1.1. Related literature

The possibility that a sovereign debtor and its creditors can jointly benefit from a debt reduction is discussed by Froot (1989), Krugman (1988a,b), and Sachs (1989), among others. They present “debt overhang” models with exogenous debt

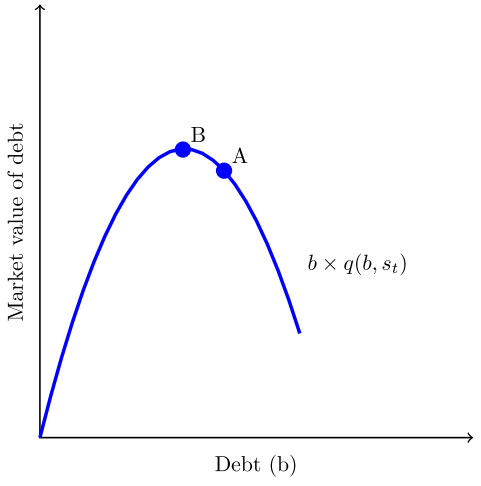

Fig. 1. Shape of the market value of the debt stock. The market value in period t is given by $b \times q(b, s_t)$, where b denotes the number of bonds outstanding, s_t denotes other state variables, and $q(b, s_t)$ denotes the bond price. Point A characterizes a state in which a debt reduction to a point like B produces capital gains from holdings of the restructured debt.