CHAPTER 2: Pathologies in Sovereign Debt

A key feature distinguishing sovereign debt contracts from debt owed by private parties is weaker contract enforcement. In a sovereign default, the remedies at the disposal of creditors—particularly private creditors—are limited by the fact that most sovereign assets are located within a sovereign's jurisdiction and cannot be seized, even when creditors have won in court (see chapter 3). In spite of this fact, many sovereigns have historically been able to borrow large amounts of funds.[6] How is this possible? Why would private debtors entrust sovereigns with their money when they cannot enforce repayment?

Inspired by this puzzle, the modern economic literature on sovereign debt, which developed in the 1980s, initially focused on understanding why sovereign debt ever got repaid. It concluded that borrowers repay because defaults are economically costly for the debtor country.[7] Countries will be able to borrow up to the point in which the temptation to default is balanced by its costs. In standard theories of sovereign debt, this level of debt is generally below the level at which countries would like to be able to borrow.

It follows that attempts to reduce the costs of default could also reduce welfare because they would make sovereign debt more expensive and lower the maximum level of debt that a sovereign can accumulate. Conversely, attempts to improve enforcement could improve welfare even if they make debt crises more painful and protracted. This logic has led some researchers to warn that proposals aimed at reducing the ex-post costs of debt crises could backfire.[8] It is thus important to also examine policy proposals in the area of crisis resolution from an ex-ante perspective—taking into account their likely impact on the sovereign debt market in normal times—rather than simply from the perspective of whether they will reduce the costs of a crisis once this has happened. The present report takes this perspective throughout.

At the same time, it is important to realize that in spite of the enforcement problem in sovereign

[6] According to the IMF's *World Economic Outlook* (April 2013 edition), general government debt in 2012 stood at about 35 percent of GDP on average in emerging markets and developing countries and over 100 percent of GDP in advanced countries.

[7] The contributions include Eaton and Gersovitz (1981); Sachs and Cohen (1982); and Bulow and Rogoff (1989a, 1989b). For surveys of the literature, see Panizza, Sturzenegger, and Zettelmeyer (2009); Wright (2011); Das, Papaioannou, and Trebesch (2012); Tomz and Wright (2013); and Aguiar and Amador (forthcoming). For evidence on the costs of default, see Mitchener and Weidenmier (2005); Tomz (2007); Borensztein and Panizza (2009); Sandleris (2012); Tomz and Wright (2013); and Cruces and Trebesch (2013).

[8] See Dooley (2000) and Shleifer (2003).

debt, it is logically possible to make crisis resolution more efficient without making debtors countries worse off in normal times. There are two reasons for this:

- Even if there is a trade-off between ex-ante incentives to repay and the ex-post costs of default, this does not mean that this trade-off cannot be ameliorated. In principle, it could be possible to improve contracts or institutions governing sovereign debt in a way that reduces crisis costs while maintaining incentives to repay.
- Furthermore, there could be important cases in which there is *no* trade-off between reducing the ex-post costs of crises and improving ex-ante incentives. For example, the costs of default could be a result of historic institutions or contracts that are not optimal in the sense of providing just the right amount of deterrent to stop creditors from repudiating. Or the situation might be complicated by incentive problems that go beyond the enforcement problem. Distorted incentives could drive a wedge between the maximum that a sovereign *can* borrow—the borrowing limit—and what it *should* be borrowing—the socially optimal amount of borrowing. If this were to be the case, reducing the costs of crises might not have any social cost ex ante. In fact, for countries that "overborrow"—in the sense that actual borrowing is above the socially optimal amount—tighter borrowing constraints would improve welfare.

The first point has been understood since at least the late 1980s.[9] Suppose that it were possibly to write contracts (implicitly or explicitly) or create institutions so as to make sovereign defaults costly if and only if they cannot be "excused" by shocks to fundamentals outside the control of debtor countries. That is, repudiations would be severely punished (and as a result, would never occur), while shocks to debt service capacity would lead to a corresponding adjustment in the debt burden without any punishment. In such a world, costly debt crises would never arise, in spite of the presence of an enforcement problem.

In the real world, however, debt crises cannot be neatly separated into excusable defaults driven by fundamentals and inexcusable repudiations. Yet there may be institutional or contractual improvements—for example, debt contracts that index repayments to variables such as international commodity prices—that reduce the frequency or costs of debt crises. The main insight is that costly crises are never *just* a reflection of the enforcement problem, but also reflect a combination of the enforcement problem with other problems, such as imperfect information or incomplete contracts. As such, it may be possible to reduce the costs of crises through institutions or contracts that legitimize debt restructurings in certain circumstances (which would obviously exclude strategic defaults). This is the flavor of some of the proposals made in the final chapter of this report.

The second point is less well understood, is potentially more controversial, and as such is the main focus of this chapter. It relates to the existence of pathologies in sovereign debt that go beyond weak contract enforcement, and the possibility that these additional pathologies may be more relevant as drivers of actual borrowing behavior. These pathologies include political failures, the moral hazard associated with the presence of international bailouts, and a lack of seniority in sovereign debt contracts. Together, they could be a source of overborrowing and suboptimal public debt management. Political considerations and inefficient contract design may also lead to a situation in which, rather than defaulting too much and too early, countries default too late and too little. In this case, reducing the costs of default will be good not only ex post—once a crisis has occurred—but

[9] See Grossman and Van Huyck (1988).

also ex ante, by reducing inefficient borrowing in normal times and making debt crises less likely.

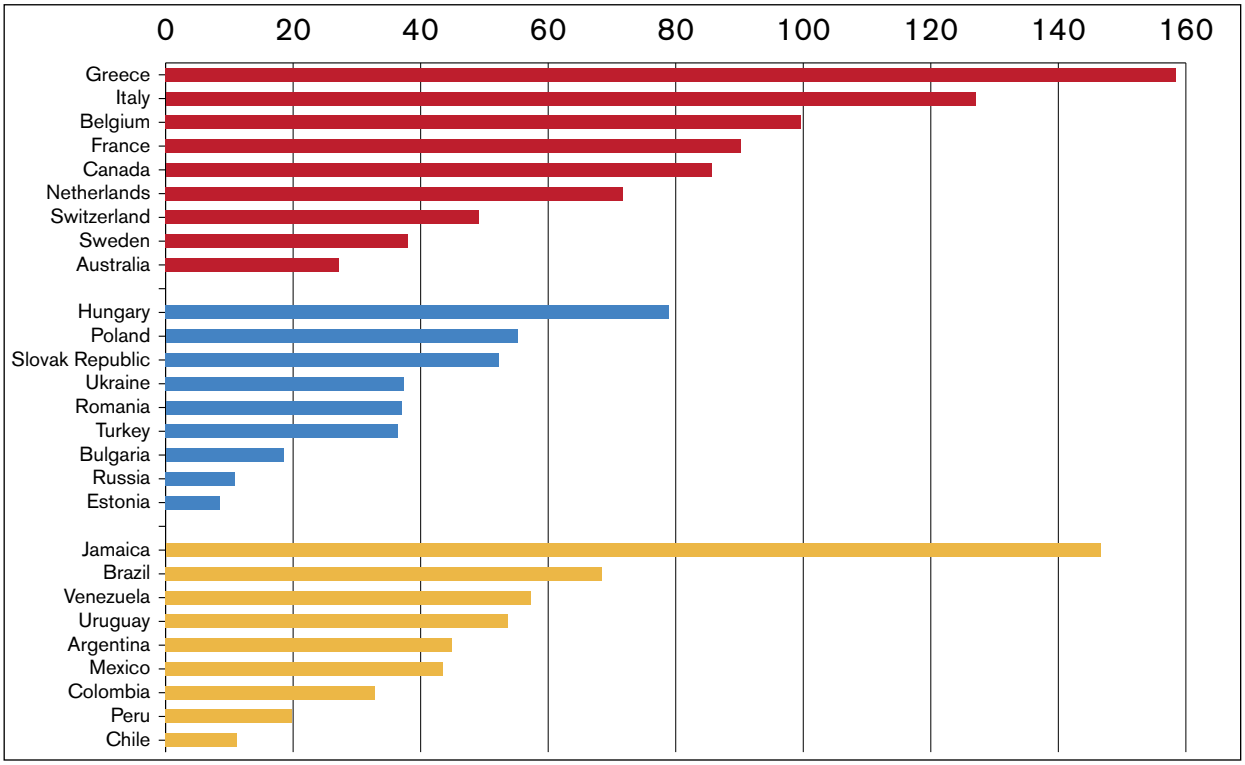
Overborrowing

In standard economic theories of sovereign debt, sovereigns are credit-constrained because their ability to borrow is capped by a level that depends on default costs. The typical situation in these models is "underborrowing," in the sense that debt levels are suboptimally low from a social perspective. Specifically, debt levels are lower than what a country would want to borrow in a world where debt contracts could be enforced in the same way as, for example, corporate debt contracts.

This view of sovereign debt is difficult to reconcile with actual borrowing behavior, both across countries and over time. Figure 1 shows 2012 general government debt levels for three groups of countries that are roughly similar, within each group, with respect to per capita income levels and (in the case of the two emerging market groups) geography and trading partners. Of the countries shown, only two (Greece and Jamaica) do not currently have access to international capital markets. Of course, the fact that a country has access to capital markets does not mean that its debt may not be primarily determined by its debt limit; these countries may want to stay somewhat below their maximum borrowing in order to have room to respond to economic shocks. The question is whether the data pattern observed in figure 1 is consistent with this notion.

Figure 1 shows that advanced economies tend to have higher debt levels than emerging market countries.[10] This is consistent with the view that

FIGURE 1. GENERAL GOVERNMENT DEBT IN THREE GROUPS OF COUNTRIES, 2012 (PERCENTAGE OF GDP)



Source: IMF, *World Economic Outlook* database, April 2013.

[10] This is true not only for the average of advanced countries and emerging markets selected in figure 1 for illustrative purposes but also more generally.

debt levels are determined by repayment prospects; advanced countries may be able to borrow in larger amounts because they are institutionally better able to commit to debt repayment, or because they are less likely to suffer shocks that would put their debt levels over the limit where debt restructuring is optimal. However, within the three groups, variations in debt levels (even ignoring Greece and Jamaica, the two outliers) are so large as to be irreconcilable with the view that most of these countries are borrowing at or close to their debt limits. It is implausible that countries' differences in commitment credibility, the location of their assets, their degree of international integration, their dependence on foreign capital or other factors that could drive differences in their borrowing limits could also explain, for example, why Canadian debt is at 86 percent of GDP while Australian debt is only 27 percent, why Italy's debt is 127 percent of GDP while that of the Netherlands is only 71 percent, why debt is only 19 percent of GDP in Peru but 45 percent in Argentina and 68 percent in Brazil, or why debt stands at 19 percent of GDP in Bulgaria but 37 percent in Romania.

Similar arguments apply over time. Belgium increased its debt level from about 75 percent of GDP in 1980 to almost 140 percent in 1993 and subsequently reduced it again to 87 percent in 2007. Over the same period, the French government's debt more than quadrupled as a share of GDP, rising more or less continuously, from about 20 percent to about 90 percent. Peru halved its government debt between 2000 and 2012. So did Sweden. In all these cases, it is difficult to imagine that these swings were the result of tighter or laxer sovereign borrowing constraints. It is more plausible that most of these countries were far from their borrowing limits during most of their histories, and that debt levels changed as a result of policy choices and economic shocks, which affected growth and determined the size of government deficits and debts.

If one accepts the fact that for most advanced and emerging market economies debt levels are determined not by the maximum amount that these countries can borrow but instead by policy choices over time, it is possible, in principle, that countries may, from a social perspective, be overborrowing rather than underborrowing—that is, they may be borrowing beyond the point at which the social cost of one additional unit of debt equals the social benefit of an additional unit of debt-financed government expenditure. Overborrowing could arise from at least three distortions.

First, policymakers often have incentives to borrow more than what is socially optimal (for a recent survey, see Eichengreen et al. 2011). Political failures can also lead to debt crises through suboptimal debt management. Contingent debt instruments with contractual obligations that are linked to a country's ability to pay can help in ensuring that a government meets its financing needs and payment obligations at the lowest possible cost consistent with a prudent degree of risk (Missale 1999). However, self-interested politicians have limited incentives to issue contingent debt instruments that have upfront costs but may yield benefits for their successors.[11]

Second, overborrowing might be the result of moral hazard linked to the presence of an international lender of last resort. Because countries tend to repay what they borrow from official lenders, there is limited empirical evidence for debtor moral hazard at the expenses of global taxpayers. Creditors, however, may have incentives to behave recklessly and lend without adequate regard to risk because official bailout packages may allow for repayments that are "too high" with respect to the social optimum. The bill is not footed by global taxpayers but by local taxpayers who end up repaying, even when it would have been better to restructure (Jeanne and Zettelmeyer 2001). Although, in principle, moral hazard can be mitigated by designing

[11] While political failures limit the supply of contingent debt instruments, market failures associated with coordination problems limit the demand for such instruments.

official rescue packages that "bail-in" private creditors, such bail-ins may not be optimal ex post, and it may be difficult for official lenders to commit to them ex ante. Official packages can also delay the moment when a country decides to restructure its debts (more is given on this below), making creditors willing to provide short-term finance to risky creditors in the hope of being able to collect before the country defaults or starts the restructuring process.

Third, overborrowing could result from the fact that, in the absence of seniority rules, new lending to high-risk countries dilutes the claims of existing creditors. Debt dilution can lead to excessive debt accumulation because the marginal interest rate does not reflect the increase in risk brought about the issuance of new debt (Bolton and Jeanne 2007). Countries with prudent fiscal policies face the opposite problem because the possibility of diluting the debt increases the risk of lending to these countries. Debt dilution has also an adverse effect on debt composition because, in the attempt to hold debt that is difficult to dilute, lenders will be reluctant to buy long-term securities or local currency debt instruments (Borensztein et al. 2005).[12]

Overborrowing requires creditors in the private or official sector that agree to provide the needed financing. Overborrowing is often facilitated by herding behavior, which leads creditors to take on too much risk during periods of global optimism.[13] Though most theoretical models of sovereign debt suggest that countries should borrow abroad during recessions and repay during good times, there is evidence that net lending to emerging market and developing countries is pro-cyclical, with large capital inflows during periods of high growth and outflows during recessions (see Panizza, Sturzenegger, and Zettelmeyer 2009, table 2). This is also true for cross-border, bank-intermediated private credit flows (CIEPR 2012).

In the stereotypical case of overborrowing syndrome, economic reforms and financial liberalization are followed by rapid and unsustainable capital inflows channeled to the private sector by domestic banks and fueled by excessive optimism among residents, foreign investors and policymakers (McKinnon and Pill 1996). A global shock, or the realization that the inflows are not sustainable, is often followed by a sudden stop (Calvo 2005), economic collapse and financial crisis. At this point, private sector liabilities are transferred to the sovereign, exacerbating the impact of public overborrowing during the preceding upswing.

As suggested by figure 1, in the advanced economies, the credit constraints associated with enforcement problems are unlikely to be binding at levels that are sufficiently low to rule out overborrowing. Many advanced economies have been able to accumulate large public debts, and, until recently, there was no strong relationship between debt levels and the borrowing costs faced by this group of countries. This remains true for the advanced economies that do not belong to the euro area (see chapter 4).[14]

In emerging market countries, debt ratios tend to be lower, and the correlation between borrowing costs and fundamentals is tighter than in the advanced economies. Low debt ratios are consistent with the presence of credit constraints associated with limited enforcement. However, a limited ability and willingness to borrow may also be due to the fact that emerging market countries have weaker institutions (Reinhart, Rogoff, and Savastano 2003), have riskier debt structures (Eichengreen et al. 2005), and face larger external financial shocks (Calvo 2005).

[12] Dilution accounts for more than 80 percent of the default risk in the baseline calibrated model of Hatchondo, Martinez, and Sosa Padilla (2012).
[13] In the presence of rational herding, investors disregard fundamentals and stand ready to either lend at will when everybody else is lending or to liquidate good credits when everybody else is also selling (see Allen, Morris, and Shin 2006).
[14] For an econometric analysis, see Dell'Erba, Hausmann, and Panizza (2013).

Table 1. Selected Bond Issuances in Frontier Markets

Country	Date	Amount (millions of dollars)	Currency	Yield (basis points)	Maturity (years)	Rating (S&P[a])
Angola	08/2012	1,000	dollar	700	7	BB-
Bolivia	10/2012	500	dollar	490	10	BB–
Honduras	04/2013	500	dollar	750	10	B+
Mongolia	11/2012	1,000	dollar	512	10	BB–
Mongolia	11/2012	500	dollar	412	5	BB–
Paraguay	01/2013	500	dollar	460	10	BB–
Rwanda	04/2013	400	euro	660	10	B
Tanzania	02/2013	600	dollar	LIBOR[b] + 600	7	NR
Zambia	10/2012	750	dollar	560	10	B+
Memo: Investment-grade U.S. corporates[c]	2011–13		dollar	450	10–15	

[a]Standard & Poor's.
[b]London Interbank Offered Rate.
[c]BofA Merrill Lynch U.S. corporate 10–15 year effective yield.

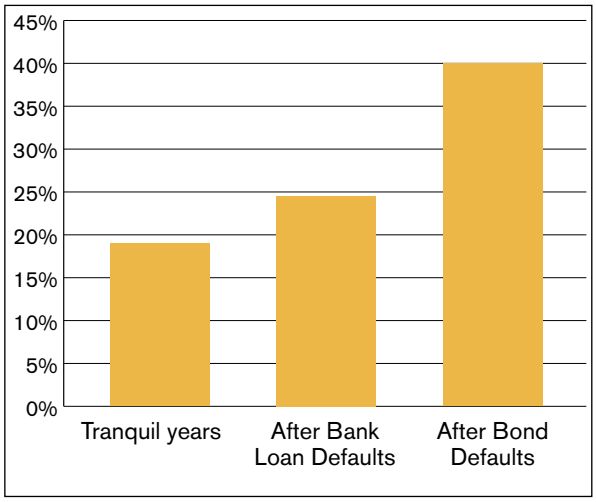
Although emerging market countries do face precarious access to credit, the presence of generalized capital flows bonanzas and sudden stops suggests that global factors may be a more important determinant of credit constraints than country-specific considerations linked to capacity and willingness to pay (Calvo, Leiderman, and Reinhart 1993; González-Rozada and Levy Yeyati 2008). For instance, in a context of historically low interest rates, investors have been willing to take greater risks to achieve returns. This "search for yield" allowed low-rated frontier markets to issue international bonds with low spreads compared with higher-rated instruments issued by traditional borrowers (table 1).

Restructuring Too Late

There is evidence that policymakers are often reluctant to restructure their debts and suboptimally postpone unavoidable defaults (e.g., Borensztein and Panizza 2009; Levy Yeyati and Panizza 2010; IMF 2013). Delayed defaults can lead to the destruction of value because a prolonged predefault crisis may reduce a country's capacity and willingness to pay. Its capacity to pay is reduced because procrastination prolongs the climate of uncertainty, high interest rates and restrictive fiscal policies that are ineffective in avoiding default but amplify output contractions. Delayed defaults reduce its willingness to pay because electors that have suffered long periods of economic austerity are less likely to support a creditor-friendly debt restructuring.

Because policymakers are often replaced after a debt default (figure 2), late restructurings may be caused by self-interested agents that have incentives to gamble for redemption, even when delays entail economic costs for society as a whole. Myopic policymakers who do not take into account the long-run costs of excessive debt accumulation may also decide to delay a default in order to have continuous access to external resources. Short political horizons may also create incentives to undertake policies that increase the vulnerability of the financial sector to government default. This generates short-term benefits in terms of a higher capacity to borrow, but at the expense of higher future default costs if the accumulated debt turns out to be unsustainable (Acharya and Rajan 2013).

Figure 2. The Probability of Replacing the Minister of Finance Given Various Events



Source: Borensztein and Panizza (2009, table 11).

Alternatively, policymakers who believe that "strategic" defaults can have large reputational costs but that "unavoidable" defaults carry limited costs in terms of reputation may decide to postpone a needed default in order to signal that the default is indeed unavoidable. Finally, policymakers may delay necessary defaults because, in the absence of a clear mechanism to manage the restructuring process, they overstate the actual costs of default.

The IMF (2013) describes several episodes in which a country decided to initiate a restructuring process years after IMF staff had judged the debt situation to be unsustainable. In the majority of these cases, the countries decided to restructure and approach the International Monetary Fund only when they lost market access. There are, however, also cases in which delays were facilitated by official sector financing to countries that had lost market access and were facing unsustainable debt situations.[15] A willingness to provide official financing to countries that face an unsustainable situation is sometimes driven by private creditors' lobbying, especially if the restructuring could lead to large losses for banks located in official lenders' countries, or due to the fear that a restructuring would trigger global market turmoil (IMF 2013).

Restructuring Too Little

In the late 1990s, it was feared that the process of debt securitization sparked by the Brady exchanges would amplify creditors' coordination problems and lead to long and litigious negotiations. However, by and large (Argentina's 2005 restructuring is a notable exception; see the next section), these fears did not materialize. The duration of the average default episodes is now much shorter than in the 1980s (Inter-American Development Bank 2006; Bi, Chamon, and Zettelmeyer 2011; Trebesch 2013).

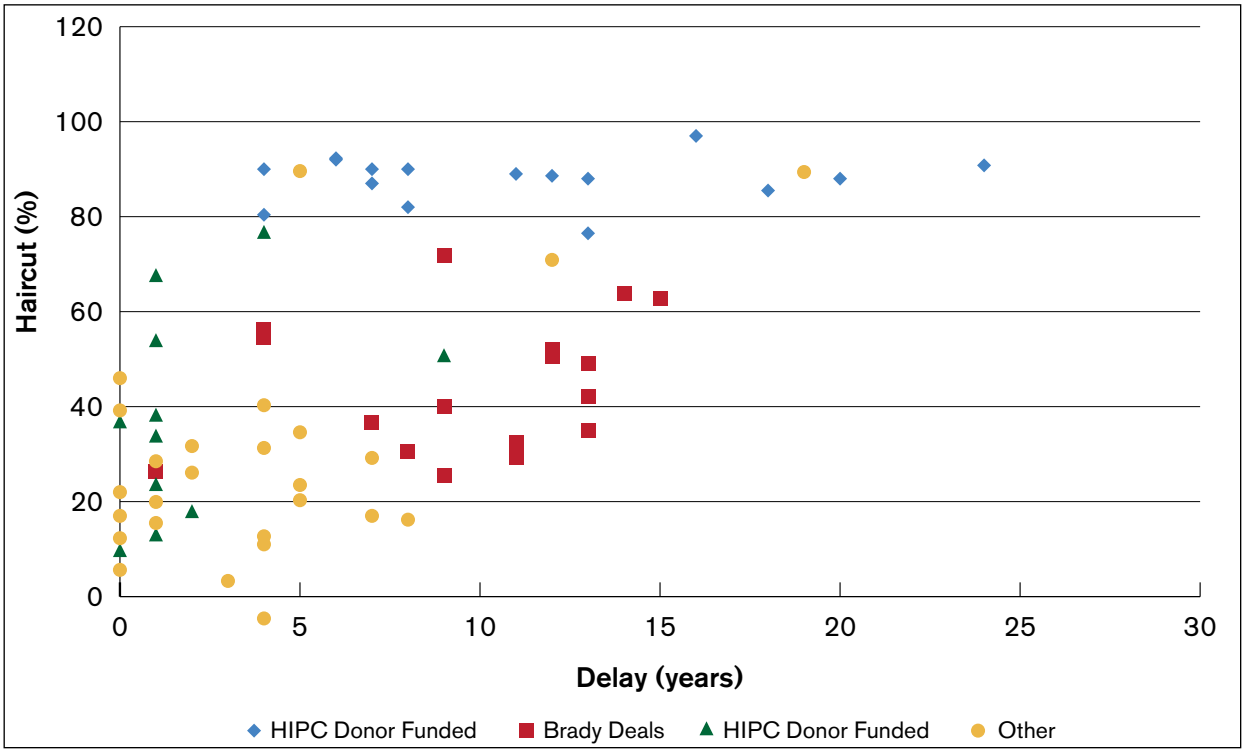
Quick debt restructurings with attractive offers, however, can lead to insufficient debt reduction and may not restore debt sustainability. The current system may thus generate two, equally bad, equilibria (Powell 2011). In the first equilibrium, countries implement quick and creditor-friendly restructurings but do not solve their debt-sustainability problem. The second equilibrium can deliver larger debt relief at the cost of long negotiations and protracted litigation. Evidence showing a positive relationship between haircuts (i.e., the losses faced by bondholders during debt restructuring episodes) and the duration of restructuring episodes (figure 3) and the bimodal distribution of haircuts (figure 4) is consistent with such a view (Powell 2012).

[15] Greece is an example. According to the IMF's (2013, 20) own assessment: "The case of Greece is also illustrative of the difficulty of introducing early debt restructuring. Even in the face of a sustained loss of market access, debt restructuring could be delayed because of the ample availability of official financing and the authorities' stated willingness to entertain an unprecedented program of fiscal adjustment. Even under these supportive conditions, however, it was not possible to establish that there was a high probability of debt sustainability as required by the exceptional access policy. The chosen course was therefore to amend the policy to create an exception to the requirement of "high probability" in circumstances where "there is a high risk of international systemic spillovers." Eventually, the planned adjustment proved unfeasible and, despite additional official sector financing on supportive terms, private debt restructuring became unavoidable and was launched in February 2012." There have been, however, also cases in which official financing and adjustments have been successful in restoring debt sustainability while avoiding a full-fledged debt restructuring. Turkey in the early 2000s is an example of a situation in which official financing was successful in addressing a nearly unsustainable debt situation (IMF 2013).

Political distortions can amplify these problems. Myopic policymakers who want to quickly access the international capital market and do not internalize the costs of future defaults may decide to advocate the implementation of quick and creditor-friendly restructurings. Equally myopic policymakers who do not need access to the international capital market may instead decide to be excessively tough with their creditors and hurt the country's international reputation.

The official sector sometimes serves to exacerbate the problem through some bias stemming from myopia or overoptimism. Some of the restructuring episodes described by the IMF (2013) were based on overoptimistic debt sustainability assessments, with relatively small face-value haircuts that did not restore debt sustainability, required prolonged official support and led to additional restructurings.[16] Problems associated with suboptimal haircuts are amplified by the fact that haircuts and debt relief are different concepts. Haircuts are usually calculated by comparing the present value of old and new debts obtained by discounting future payments with the exit yield (i.e., the interest rate faced by the country when it completes the restructuring process).[17] However, countries should evaluate their debts by using the interest rate that they expect to prevail in noncrisis times. Sturzenegger and Zettelmeyer (2007) apply this idea to a series of debt restructuring episodes that took place between 1998 and 2003 and show that the debt relief of these restructuring episodes is significantly smaller than the losses suffered by investors.

FIGURE 3. THE LONGER THE RESTRUCTURING NEGOTIATIONS, THE HEAVIER THE HAIRCUT



Note: HIPC = Heavily Indebted Poor Countries initiative.
Sources: Powell, Sandleris, and Tavella (2013); Tavella (2013).

[16] However, there are also a few cases in which restructurings exercised that were deemed to be too timid ended up being successful in restoring debt sustainability. One example is Uruguay's 2003 debt restructuring that, according to a 2006 assessment, was deemed to have left significant debt vulnerabilities (IMF 2006).
[17] Formally: H^{sy}= 1 – Present Value New Debt (r) / Present Value Old Debt (r), where r is the exit yield.

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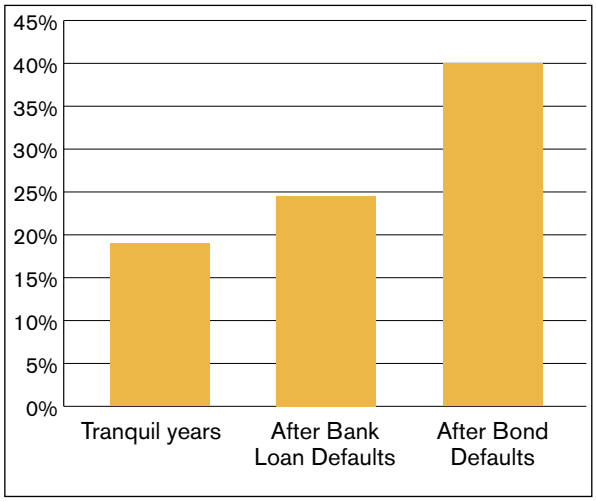

Source: Borensztein and Panizza (2009, table 11).

Alternatively, policymakers who believe that "strategic" defaults can have large reputational costs but that "unavoidable" defaults carry limited costs in terms of reputation may decide to postpone a needed default in order to signal that the default is indeed unavoidable. Finally, policymakers may delay necessary defaults because, in the absence of a clear mechanism to manage the restructuring process, they overstate the actual costs of default.

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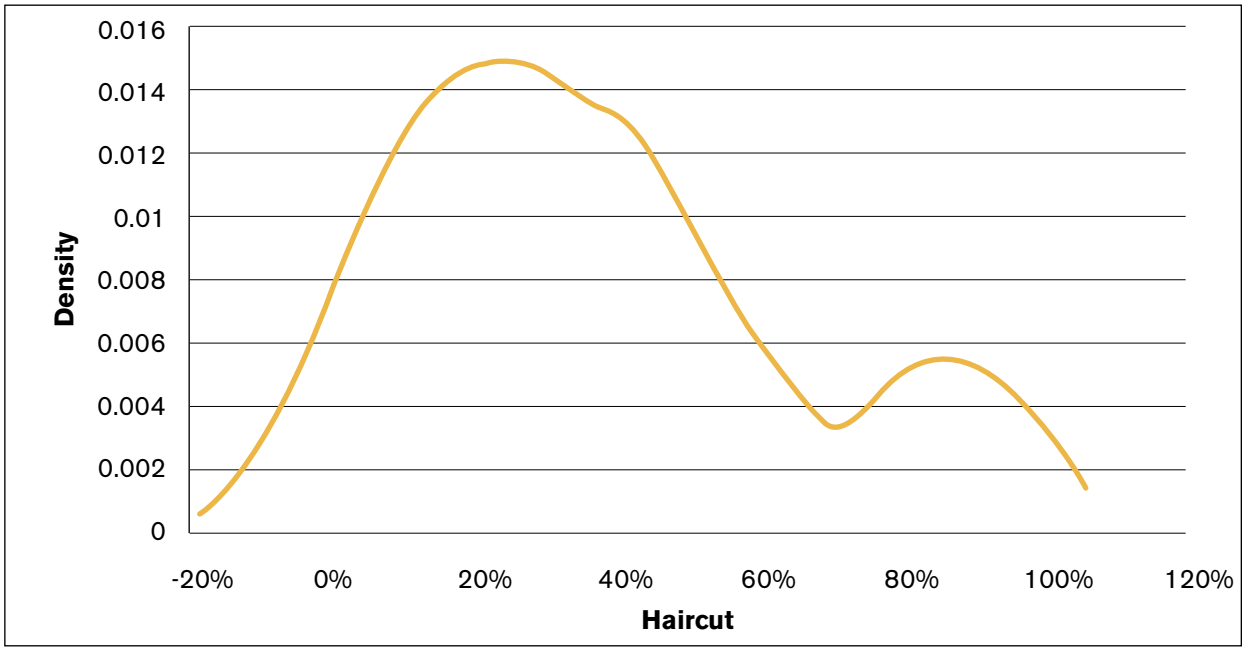
Figure 4. Haircuts Seem to Have a Bimodal Distribution



Source: Powell (2012).

Prophylaxis

If the pathologies described above dominate the classic enforcement problem, a reform that facilitates the debt restructuring process, strengthens incentives for evaluating credit risk, and reduces procrastination could be efficient both ex post and ex ante:

- If easier debt restructuring bolsters incentives to carefully assess country risk, a reform in this direction will increase borrowing costs for countries with unsustainable policies and reduce their ability to accumulate excessive debts. Conversely, a smoother debt restructuring process may benefit (or at least not harm) countries that do not overborrow because, in the case of a large negative shock, investors are likely to obtain higher recovery values (Rogoff 2003).[18]
- A system that guarantees speedy and transparent debt restructurings can also reduce the overborrowing associated with creditor moral hazard because it allows the international financial institutions to resist pressure to lend to countries that face sustainability problems. This will be particularly true if the restructuring process is combined with a clear set of rules that allows for exceptional financing to countries that face liquidity problems but prevent official lenders from providing funds to countries that face an unsustainable debt situation.
- A sovereign debt restructuring framework could also have positive effects on debt composition. Reforms that reduce moral hazard and lead to more careful country-specific risk assessment may provide policymakers with incentives to issue "safer"—from the

[18] A possible caveat is that, in the presence of uncertainty (or other market imperfections), creditors may reduce lending flows to countries with a fully sustainable debt situation.

point of view of the issuer—debt instruments. Enforceable seniority rules that address debt dilution problems may reduce overborrowing and increase investors' willingness to hold such instruments.

Although marginal improvements to the debt workout process are unlikely to result in inefficiencies ex ante,[19] it is possible that reform designed to facilitate sovereign debt restructuring could overshoot and, by reducing a country's willingness to pay, raise the borrowing costs of solvent sovereigns. However, the chances that this might happen are contained by the fact that willingness to pay is sustained by the economic costs of default, which are not directly affected by the debt restructuring regime. Besides the political costs of default mentioned above, a large literature suggests that defaults inflict broad "collateral damage" on the debtor country. Defaults may have a negative effect on the country's overall reputation (not just its reputation vis-à-vis its creditors) and increase the costs of all its transactions and agreements (economic and political, domestic and international) that require a substantial amount of trust among the counterparties (Cole and Kehoe 1998).[20] If such reputational costs are large enough, the country's willingness to pay will be maintained even in the presence of an (ex-post) efficient debt restructuring mechanism. Indeed, a sovereign debt court able to assess ability to pay could create willingness to pay by increasing the reputational costs of strategic defaults and mitigate the delayed default problems by reducing the reputational costs of unavoidable defaults.

To conclude, there are multiple ex-ante problems associated with sovereign debt, and these problems in principle could be reduced through a sovereign bankruptcy procedure, without necessarily exacerbating the enforcement problem. This said, the design of complex mechanisms that can deal with several inefficiencies at once is rife with difficulties and would require significant information and commitment capacity. The last chapter of this report discusses whether such mechanisms might be legally and politically feasible.

[19] For evidence showing that collective action clauses do not significantly increase borrowing costs for most issuers, see Eichengreen and Portes (1995); Eichengreen and Mody (2000); and Bradley and Gulati (2012).

[20] An alternative class of models suggests that sovereign defaults may have large economic costs because they reveal negative information on the underlying structure of the economy (Sandleris 2008; Catão, Fostel, and Kapur 2007).