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This paper uses the rules of engineering as a rhetorical device to discuss why the international financial architecture needs a structured mechanism for dealing with sovereign insolvency. The paper suggests that the most important problem with the status-quo relates to delayed defaults and sketches a proposal aimed at mitigating this problem.

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Abstract

This paper uses the rules of engineering as a rhetorical device to discuss why the international financial architecture needs a structured mechanism for dealing with sovereign insolvency. The paper suggests that the most important problem with the status-quo relates to delayed defaults and sketches a proposal aimed at mitigating this problem.

Keywords: Sovereign debt, Sovereign default
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A sovereign debt crisis can be a painful experience for both the debtor and its creditors; a mismanaged sovereign debt crisis can be a catastrophically painful experience (Buchheit and Gulati, 2010)

1 Introduction

This paper suggests that the creation of a structured mechanism for managing sovereign debt crises is a desirable and feasible addition to the international financial architecture. The biggest problem with the *status quo* relates to the fact that policymakers rarely follow Buchheit's (2011) "If it can't be avoided, don't try" advice. Instead, they often postpone necessary defaults at great costs for society *and* creditors. The paper sketches a mechanism that could mitigate this problem.

Given the complexity of the task at hand, I will organize my discussion using a set of well-specified rules. In particular, I will frame my arguments with the six golden rules of engineering for successful project management. These rules are: (1) If it ain't broke don't fix it; (2) Always know what problem you are working on; (3) Avoid needless complexity (also known as KISS: Keep It Short and Simple); (4) Don't do something stupid; (5) Every decision is a compromise; (6) Don't panic!

Readers of Douglas Adams will immediately recognize that the last rule also works for intergalactic travel. Therefore, I will augment my list with the second golden rule of intergalactic travel: "know where your towel is" (i.e., you can gain credibility by signaling to others that you know what you are doing, Adams, 1979).[1] I will also draw from rules that apply to emergency care and arboriculture.

[1] "... a towel has immense psychological value. For some reason, if a strag (strag: nonhitchhiker) discovers that a hitchhiker has his towel with him, he will automatically assume that he is also in possession of a toothbrush, washcloth, soap, tin of biscuits, flask, compass, map, ball of string, gnat spray, wet-weather gear, space suit etc., etc. Furthermore, the strag will then happily lend the hitchhiker any of these or a dozen other items that the hitchhiker might accidentally have "lost". What the strag will think is that any man who can hitch the length and breadth of the galaxy, rough

The rest of the paper is organized as follows. Section 2 shows that something is broken (first rule) and spells out the problems that I would like to address (second rule). Section 3 concentrates on the third and fourth rules by discussing complexity and blowback effects. Section 4 goes back to the second rule and discusses how a reform could avoid the sense of panic (violation of the sixth rule of engineering) that often characterizes debt restructuring exercises. Section 5 sketches a proposal for mitigating the delayed default problem. Section 6 concludes.

I am well aware that the proposal outlined in Section 5 is currently not politically feasible. However, in writing this paper, I decided to follow Anna Gelpern (2013) suggestion: "… to challenge imaginations until reality catches up."

2. The Nature of the Problem (Rules 1 & 2)

According to the first rule of engineering, reform proposals should start by showing that something is indeed broken and needs to be fixed. A list of problems that need to be addressed is also a necessary condition for satisfying the second rule of engineering.

There are at least 6 problems with the current non-system for the resolution of sovereign debt crises.[2]

The *first* problem relates to the fact that debt renegotiations tend to be lengthy and have uncertain, and sometimes unfair, outcomes. This was the motivation at the basis of one of the first proposals for a mechanism for restructuring international sovereign debt

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it, slum it, struggle against terrible odds, win through, and still knows where his towel is, is clearly a man to be reckoned with."

[2] Gelpern (2013) lists 8 problems with the current sovereign debt restructuring process (to the six problems in my list, she adds issues related to the legitimacy of debt contracting and debt restructuring). Next, she points out that not all of these problems require a bankruptcy regime. In her view, the debate should focus on the facts that: (i) the combination of weak immunity and unenforceable debt leads to unpredictable enforcement strategies and does not allow for a true fresh start, even when most creditors agree to restructure their claims; and (ii) the current process is not transparent and lacks legitimacy.

(Oechsli, 1981).[3] In Oechsli's view, delays and uncertain outcomes are due to technical reasons linked to the lack of an established procedure and a clear set of rules for dealing with sovereign debt restructuring.[4]

A related issue has to do with the fact that debt restructuring exercises may not end up restoring debt sustainability. Wright (2011) studies 90 defaults and renegotiations on debt owed to private creditors by 73 countries and shows that debt renegotiations had an average length of over 7 years, produced average creditor losses of 40 percent, and led to limited debt relief.

Large "Haircuts" may not restore sustainability because haircuts and debt relief are not the same (Zettelmeyer, 2012, Sturzenegger and Zettelmeyer, 2007). Haircuts are usually computed by comparing the market value of the rescheduled debt with its original face value. This practice leads to an asymmetric treatment of old and new debts, with the new debt being evaluated with a much higher discount rate with respect to the old debt. However, if debt restructuring does indeed restore debt sustainability and the country is committed to repay, the present value of future obligations should be assessed with a lower discount rate. Therefore, from the point of view of the debtor country, debt relief is much lower than the haircut from the point of view of bondholders. Sturzenegger and Zettelmeyer (2007) look at a sample of debt exchanges over 1980-2007 and show that in most cases the debt relief implied in these exchanges was about 20 percentage points lower than the haircut.[5]

[3] Rogoff and Zettelmeyer (2002) summarize the history of ideas on bankruptcy procedures for sovereigns. Bernsmann and Hezberg (2009) and Kaiser (2010) describe and compare proposals aimed at establishing procedures for sovereign insolvency.

[4] Along similar lines, Pitchford and Wright (2012) present a formal model showing that creditors' coordination problems increase negotiation costs and amplify delays for certain countries. However, Pitchford and Wright's (2012) calibrations also suggest that better creditor coordination may lead to longer delays in complicated restructurings.

[5] In the case of the 2003 restructuring of Uruguay's external debt, Sturzenegger and Zettelmeyer (2007) calculate that a 13 percent haircut corresponded to a 5 percent increase in the country's actual debt burden. Zettelmeyer (2012) shows how different discount rates can yield very different haircuts for the 2012 restructuring of Greece's debt.

The *second* problem with the current system relates to creditors' coordination and incentives to holdout from debt renegotiation. In the presence of debt overhang, a reduction in total debt could benefit both debtors and creditors (Krugman 1988, Sachs, 1989). However, debt reduction requires a coordination mechanism that forces all creditors to accept some nominal losses. In the absence of such a coordination mechanism, each individual creditor will prefer to hold out while other creditors cancel part of their claims. Free-riding and coordination problems are exacerbated by the presence of vulture creditors who buy debt at deep discount on the secondary market, with the explicit intention of litigating after the majority of creditors has reached a settlement with the defaulting country (for a discussion, see Panizza et al., 2009).

After noting that most recent sovereign debt restructuring episodes were resolved fairly rapidly, and with limited litigation (for a model consistent with this fact, see Zettelmeyer et al., 2011), Zettelmeyer (2012) concluded that: "Collective action problems are overrated." Judge Griesa's interpretation of the *pari passu* clause in NML Capital., Ltd., *versus* Republic of Argentina may lead to a reassessment of this view.[6] Moreover, the fact that some countries that implemented quick and creditor-friendly restructuring are again facing debt sustainability problems casts some doubts on the desirability of creditor-friendly approaches that avoid litigation.[7]

Besides coordination problems, the presence of different types of debt and of dispersed bondholders makes restructuring technically difficult. Verifying claims and

[6] For a description of events see *The Pari Passu Saga* (http://ftalphaville.ft.com/tag/pari-passu-saga/). For a discussion of the legal implications of Judge Griesa's decision see Gelpern (2012a, b, c, d).

[7] In joint work with Yuefen Li and Rodrigo Olivares Caminal (Li et al., 2011), we describe the debt restructuring episodes of Belize, Granada, and the Seychelles as successful example of fast and creditor-friendly debt restructuring. Unfortunately, the first two countries are again facing problems servicing their debts and the third is observing debt ratios which are well above their projected values at the time of restructuring. It now seems evident that these debt restructuring episodes did not follow Buchheit's (2011) fourth principle for a successful debt restructuring: "Ask for enough debt relief."

compiling a consolidated list of the outstanding debt affected by the default is often difficult and time consuming.

The *third* problem with the *status quo* relates to the lack of private interim financing. During the restructuring period, the defaulting country may need access to external funds to support trade or finance a primary current account deficit (as the debt is not being serviced, interest payments and debt rollover are irrelevant). Lack of interim financing may amplify the crisis and further reduce ability to pay.

If private creditors were to provide interim credit at a reasonable interest rate, they would realize large losses because interim financing is not senior with respect to existing claims (in the corporate world, the seniority of creditors that provide interim financing is guaranteed by the presence of debtor-in-possession -DIP- provisions). As a consequence, interim financing is usually provided by official creditors (such as the IMF and other multilateral organizations) that are *de facto* (albeit, not *de jure*) senior to private creditors.[8]

Moral hazard is the *fourth* problem with the current system. The presence of self-fulfilling runs may lead to multiple equilibria. In the good equilibrium, a solvent borrower has continuous access to finance and remains solvent. In the bad equilibrium, the sudden withdrawal of financial resources caused by panicked lenders can push an otherwise solvent borrower towards insolvency. An effective international lender of last resort (ILOLR) can avoid the bad equilibrium by committing to provide financing if a solvent country were to face problems to service its debt.[9] While the presence of an ILOLR can reduce financial instability, it can also be a source of moral hazard and overborrowing

[8] Until the mid1980s, not even the IMF could provide interim financing. The rule was that "if bank creditors refused to reschedule the country's debts, the Fund would normally suspend access to its own money" (Boughton, p. 477, quoted in Rogoff and Zettelmeyer, 2002). The IMF agreed to lend into arrears in an 1986 stand-by arrangement with Bolivia and formalized its new lending into arrears policy in 1989 (Rogoff and Zettelmeyer, 2002).

[9] My discussion on the links between ILOLR and the design of a crisis resolution draws from Fernández-Arias (2011).

(Powell and Arezomena, 2003, provide a theoretical analysis, with implications for reforming the international financial architecture).[10]

Massive IMF-coordinated crisis lending during the second half of the 1990s led some observers to claim that, because of moral hazard, the IMF was a source of, rather than a solution to, financial crises. For instance, Barro (1998) suggested that "..the IMF might consider changing its name to the IMH-the Institute for Moral Hazard." Those who recognize the utility of having an ILOLR suggest that overborrowing problems linked to moral-hazard can be mitigated if IMF programs bail-in (instead of bailing out) private creditors. Some IMF programs do bail-in private creditors by asking the program country to restructure some of its commercial debt. However, bail-ins are conducted on ad-hoc basis, and there is not transparent system for private sector involvement in IMF programs.

An issue that is closely related to moral hazard is overborrowing caused by debt dilution. This is the *fifth* problem with the *status quo*. Debt dilution refers to a situation in which, when a country approaches financial distress, new debt issuances can hurt existing creditors (Bolton and Jeanne, 2007). In the corporate world, debt dilution is not a problem because courts can enforce seniority rules. After a sovereign default, instead, all creditors, old and new, tend to receive the same treatment.

A debt crisis resolution mechanism capable to enforce seniority would thus have two advantages: it would allow for interim financing (through DIP provisions) and it would prevent debt dilution and thus reduce borrowing costs and overborrowing (Bolton and Skeel, 2004).

The *sixth* and, in my view, most important problem with the *status quo* relates to delayed defaults. While standard models of sovereign debt assume that countries have an incentive to default too much or too early, there is now evidence that policymakers are

[10] The ILOLR is always in a difficult position. It will be criticized for being a source of moral hazard if it continues disbursing and accused of precipitating a crisis if it stops the program. This is why Powell and Arezomena (2003) called the IMF, the impossible monetary fund.

often too reluctant to default, and do everything they can to avoid default (Borensztein and Panizza, 2009, Levy Yeyati and Panizza, 2010, and Zettelmeyer et al., 2012).[11] Delayed defaults can lead to a destruction of value because a prolonged pre-default crisis may reduce both ability and willingness to pay.

Policymakers may delay necessary defaults to either protect their careers or to protect the reputation of the country. A politician concerned about his political survival faces a tradeoff that is different from the one affecting the representative citizen. There is evidence of high political turnover following a debt default, and self-interested policymakers may try postponing defaults, even if this entails an economic cost for society at large (Borensztein and Panizza, 2009).

Alternatively, well-intentioned policymakers may postpone defaults to ensure that there is broad market consensus that the decision is unavoidable and not strategic. This would be in line with economic models that assume that sovereign debt contracts include an implicit clause that justifies "necessary" defaults (Grossman and Van Huyck, 1988). In such a set up, “strategic” defaults are very costly in terms of reputation—and this is why they are rarely observed in practice—while “unavoidable” defaults carry limited reputation costs. Given that there is no clear criterion for separating strategic from unavoidable defaults, policymakers may decide to postpone a needed default, and inflict great pain to the country's population, in order to signal that default is indeed unavoidable. This behavior, in which politicians choose the lesser of two evils, is a second best solution to a situation in which policymakers optimally respond to a distortion (lack of enforceability) with another distortion (delayed default).

If the need of signaling good faith is indeed the reason for delayed defaults, there are policy options that could move the situation from a second to a first best. A credible

[11] Zettelmeyer et al. (2012) find that sovereign debt restructurings usually begin six month to two years later than what suggested by the academic and policy consensus.

sovereign insolvency mechanism, with the ability of establishing and certifying ability to pay, could solve the signaling problem and, by avoiding sub-optimally delayed defaults and preventing protracted pre-default crises, increase recovery value. The mechanism would thus be efficient both *ex-ante*, because the increase in recovery value would lower sovereign spreads, and *ex-post*, as it would lead to a quicker and less painful resolution of sovereign defaults.

According to Gelpern (2013), an underemphasized reason for delayed defaults has to do with the fact that bailouts from partner countries or international financial institutions allow countries to continue accumulating debt, well beyond the point at which the country should have started the restructuring process. In Section 5 below I sketch a solution to this problem.

3 Can the Solution be worse than the Problem? (Rules 3 & 4)

Those who are opposed to the creation of a structured mechanism for the resolution of debt crises argue that, while the problems listed above (at least some of them) may be real and important, there is no feasible solution. In fact, the argument goes, any attempt to implement a solution would end up making things worse. According to this view, the creation of a structured mechanism for the resolution of sovereign debt crises would jointly violate the first principle of emergency medical services (*primum non nocere*) and the fourth and fifth rules of engineering (avoid needless complexity, and don't do something stupid).

There are 4 standard objections to the creation of a structured mechanism for the resolution of sovereign debt crises: (i) it would raise borrowing costs; (ii) the introduction of Collective Action Clauses (CAC) makes the mechanism irrelevant for market access countries and the HIPC Initiative, together with IMF/World Bank Debt Sustainability

Framework (DSF), make the mechanism irrelevant for low income countries;[12] (iii) in principle it is a good idea, but it is not going to happen, at least in the short-run, because it would take too long to reach the necessary international consensus; (iv) as there are no well-defined criteria for establishing capacity to pay, the mechanism would always be subject to political pressures dictated by geopolitical considerations.

3.1 Higher Borrowing costs

The "borrowing cost" story is the most common objection to the creation of a crisis resolution mechanism. A group of emerging market countries opposed the creation of the IMF-sponsored SDRM because of the specter of higher borrowing costs. This was also the European Central Bank's main objection to the creation of a European crisis resolution mechanism.[13] While this argument carries a lot of weight in policy discussions, the hypothesis that the creation of a crisis resolution mechanism would lead to higher borrowing costs does not have strong empirical foundations.[14]

From a purely theoretical point of view, it could go either way. On the one hand, the current system is second-best efficient. In the presence of non-enforceable contracts (the first distortion), willingness to pay is linked to the costs of default brought about by the problems described above (the second distortion). Therefore, improving the system would be inefficient *ex-ante*, as it would reduce the costs of default and increase borrowing

[12] In its June 2012 paper titled "Arbitration and Sovereign Debt," the Steering Committee of the Netherlands Government and the Permanent Court of Arbitration reached the conclusion that "thanks to a number of prior reforms, existing mechanism for handling sovereign debt currently function better than it may be appreciated." (paragraph 4, page 2). The paper explicitly mentions CACs (paragraph 7) and the HIPC Initiative (paragraph 6) as viable solutions to the debt problems of developing countries.

[13] "Trichet warns on bail-out system dangers" Peter Spiegel, Financial Times, October 29 2010.

[14] It is also important to note that, under certain conditions, lower capacity to borrow could actually be a good thing (Rogoff and Zettelmeyer, 2002).

costs (Dooley, 2000, Shleifer, 2003).[15] On the other hand, the presence of debt overhang and delayed defaults may lead to loss of value for both debtors and creditors, and debt dilution can lead to overborrowing and higher borrowing costs. A structured mechanism that addresses these problems could increase recovery value, and potentially lead to lower borrowing costs.

Since theory is inconclusive, we need to look at what the data say. While it is impossible to conduct a direct test of the hypothesis that the creation of a debt resolution mechanism would increase borrowing costs (because such a mechanism does not exist), we can indirectly test this hypothesis by checking whether other mechanisms that facilitate sovereign debt restructuring have an effect on borrowing costs. One candidate is the introduction of collective action clauses (CAC).[16]

Eichengreen and Portes (1995) and Eichengreen and Mody (2000) were the first to show that there are no significant difference in yields between English Law sovereign bonds (which include CACs) and New York law sovereign bonds (which, in the past, did not generally include CACs).[17] Nevertheless, at the beginning of the new century there was still a lingering fear that introducing CACs in New York law sovereign bonds would increase borrowing costs. It took a long US-Treasury led campaign to convince a major issuer to include CACs in its New York law bonds.[18] In February 2003, Mexico issued its

[15] This objection is also present (albeit, in a more nuanced form) in Pitchford and Wright (2012) and Wright (2012).

[16] CACs do not address all of the problems listed in Section 6 (see below), but they can help in addressing creditor-coordination. CACs can also limit the need for bailouts as private investors might be more willing to accept a restructuring if they are not worried about problems arising from holdouts (Weidemaier and Gulati, 2012).

[17] Weidemaier and Gulati (2012) show that some New York Law bonds issued in the 1990s did include CACs. In the US, corporate bonds cannot include collective modification clauses because these clauses are prohibited by the Trust Indenture Act (Weidemaier and Gulati, 2012).

[18] For a discussion, see Gelpern and Gulati (2007). While there are five different types of CACs (trustee clauses; collective representation clauses; modification clauses; sharing clauses; acceleration clauses; and aggregation clauses), the academic and policy discussion has concentrated on modification clauses and, to a smaller extent, acceleration clauses. Modification clauses can solve creditor coordination problems because they enable the amendment of any of the terms and conditions of the bonds (including the payment terms) if a majority of bondholders (usually 75-85

first New York law bond with two types of CACs (collective modification and collective acceleration), many other issuers followed. It is now estimated that more than 90 percent of sovereign bonds issued under New York law include provisions that do not require unanimity for altering payment terms (Bradley and Gulati, 2012). Research based on the joint analysis of these new issuances and the traditional split between English and New York law bonds confirmed that CACs have no negative impact on borrowing costs (Bradley and Gulati, 2012). In fact, Bradley and Gulati (2012) found that the introduction of CACs is especially valuable for high-risk sovereigns.[19] This finding could be due to the fact that, by facilitating early restructuring, CACs may prevent costly delayed defaults.

Another possible source of concern is that the creation of a structured mechanism will have some vaguely defined reputational cost. Again, these statements cannot be formally tested (because it is not clear why such a mechanism would affect reputation). However, this objection should recognize that reputational costs associated to sovereign defaults are either very small (Ozler, 1993, Benczúr and Ilut, 2009), or short lived (Borensztein and Panizza, 2009), or both small and short-lived (Flandreau and Zumer, 2004). There is, in fact, more and more evidence that the costs of defaults are domestic rather than external (Panizza et al., 2009 provide a survey, Gennaioli et al., 2012, discuss the links between sovereign defaults and banking crises).

3.2 We don't need it anymore (Rule 1, again)

The argument that a mechanism is no longer needed because most countries are now including CACs in their global bonds also appears to be flawed. While CACs are a useful

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percent of the principal amount of the outstanding bond) agree to the amendment. Collective acceleration clauses prevent individual bondholders from demanding full payment after a default and require a minimum number of bondholders to approve such action.

[19] This latter finding is somewhat in contrast with what previously found by Eichengreen and Mody (2000) and with the calibrations of Pitchford and Wright (2012).

innovation, they only address one out of the six problems listed above. Moreover, even if all new issuances were to include CACs, it will take some time before the whole stock of bonded debt will include CACs (this is often referred to as the transition problem).

At this stage, CACs are mostly defined at the bond level. Therefore, they do not solve coordination problems for countries with many types of outstanding bonds. Holders of one specific issue (or holders of non-bonded debt) have an incentive to holdout as they can free ride on the modification of the terms of payment of another issue. It is therefore necessary to have a system that allows to aggregate votes across different types of bonds and creditors. Aggregation clauses have been used in the Uruguayan debt exchange of April 2003 and are now at the center of the discussion in Europe (even though, it is not clear why European sovereigns, that tend to issue debt using domestic law need such clauses, for a discussion see Gelpern and Gulati, 2011). While aggregation clauses may be easy to design for countries that have a relatively small number of outstanding bonds, things are more difficult for countries with a large number of outstanding bonds (at the time of its 2001 default, Argentina had more than 80 outstanding bonds).

According to Gelpern (2013), creditor coordination across groups is much more difficult than within groups. Even when all bonded debt will include CACs, we will still have problems related to coordinating the actions of different classes of creditors (bondholders, syndicated bank loans, bilateral and multilateral creditors).

We may also need to reassess the view that creditor coordination is not an important issue. The October 2012 ruling in NML Capital., Ltd., *versus* Republic of Argentina may allow holdout creditors to interfere on payments on restructured debt and jeopardize any future attempt of sovereign debt restructuring that does not reach full unanimity.

Not all countries issue bonds or borrow from commercial creditors. The debt problems of low income countries, which tend to borrow from official creditors at a

concessional rate, have been traditionally dealt with *ad hoc* debt relief through Paris Club meetings and, more recently, with the Heavily Indebted Poor Countries (HIPC) and Multilateral Debt Relief (MDRI) initiatives. However, some countries that benefitted from debt relief under the HIPC and MDRI initiatives are again at risk of debt distress. Other low income countries have started accessing the international capital market or are borrowing from non-OECD bilateral creditors. CACs and other existing mechanisms are ill-suited for dealing with the future debt problems of this latter group of countries.

3.3 It is too difficult

The steering committee that drafted the "Arbitration and Sovereign Debt" Report concluded that: "…the wider use of arbitration in the context of sovereign debt would not be a simple undertaking." It is indeed true that building a structured mechanism for dealing with sovereign insolvency would be a difficult endeavor. This is not a good reason for not trying.

Many tasks that seemed impossible then, are considered trivial now. This applies to technology (heavier than air flying machines!), but also to policies, initiatives, and institutional innovations. Consider the cases of the HIPC and MDRI Initiatives. They now seem an obvious solution to an intractable problem. When they were initially proposed, the first reaction of the official sector was "this cannot be done, it would create moral hazard and, anyway, we do not have the resources."[20]

The best answer to the "it's too difficult" objection to the creation of a structured mechanism is in the first rule of Arboriculture: The best time to plant a tree was 20 years ago. The next best time is now.

[20] For an entertaining recount of the events see Hertz (2008).

Saying that something is difficult is not a good excuse for not trying. Moreover, while creating a standing insolvency court would indeed be institutionally difficult, setting a simpler ad-hoc arbitration process would be relatively easy (albeit, less satisfactory than a full-fledged court).[21]

3.4 It cannot be independent (Rule 5)

While the first three objections to the creation of a mechanism for the resolution of sovereign debt crises can be easily allayed, the fourth is indeed a formidable problem. It is true that there is no clear criterion for defining and measuring debt sustainability and that, in the absence of such a criterion, there is the risk that an international body in charge of adjudicating claims may be influenced by political considerations and pressures.

However, the World Trade Organization (WTO) is often called, through its Dispute Settlement mechanism, to rule on issues for which there is no precise technical solution. In most cases, the financial and political implications of WTO's decisions are larger than those related to the adjudication of a sovereign default. And yet, these rulings are normally respected and deemed to be free from political pressures.

Arbitration proposals like the one described in Kaiser (2010) aim at de-politicizing the process by allowing creditors and debtors to jointly appoint the arbitration panel which, in turn, will decide which institution, agency, or individual will assess capacity to pay.

It is, however, clear that geopolitical considerations will always play a role (but they also do it now). It is an open question whether a simpler and faster process might be worth the price of additional political influence (remember the fifth rule of engineering: every decision is a compromise). The fact that debt restructuring exercises conducted

[21] Kaiser (2010) provides a detailed discussion of the pros and cons of alternative institutional set-ups.

under the coordination of international organizations tend to work better than uncoordinated defaults seems to provide a positive answer to the above question.

4 What problems should the mechanism address (Rules 2 and 6)

The key problem with the *status quo* relates to delayed defaults. Postponing a necessary default prolongs the economic crisis in the debtor country and reduces recovery value because of its negative effects on ability and willingness to pay. Therefore, delayed defaults hurt both creditors and debtors. The pain in the debtor country is not compensated by anybody else's gain.[22]

Delayed defaults often come with a sense of urgency, panic (violation of rule 6), and the impression that policymakers have no idea of what they are doing (a violation of the second rule of intergalactic travel). Consider the recent European experience. We started with: "we are not in Latin America. European countries don't default." Then we moved to: "OK, Greece needs to restructure, but its case is unique and exceptional. No other Eurozone country will default." At time of writing, a Cypriote default is anything but certain. Maybe European leaders will justify this change in opinion by stating that, after all, in Cyprus people speak Greek.

The Sovereign Debt Restructuring Mechanism (SDRM) put forward by former IMF First-Deputy Managing Director Anne Krueger (Krueger, 2002) is the best known proposal for the creation of a structured mechanism for dealing with sovereign insolvency.[23]

Although there is much that I like about the SDRM proposal, I think that the SDRM fell short in two areas. First, it put the IMF at the center of the process. Being a

[22] While this pain without gain could be optimal *ex-ante*, I do not think that this is the case (see Section 3.1 above).
[23] Other well-known proposals are by Bolton and Skeel (2004), Paulus (2012) and Raffer (1990).

creditor itself, the Fund is unlikely to be *perceived* as an impartial arbiter in a debt restructuring exercise. Second, the SDRM concentrated on the creditors' coordination problem. Absent sudden increases in coordination problems related to NML *vs* Argentina, limited innovations that only aim at dealing with creditors' coordination are not worth their political and institutional cost (Gelpern, 2013, makes the same point).

As most proposals for reforming the sovereign insolvency process concentrated on the creditor coordination problem, those who support *the status quo* respond with the: "We don't need it anymore" objection. After pointing to the flaws of this objection (as I did in Section 3.2), supporter of a statutory approach should make it clear that creditor coordination is *not* the main issue. Delayed defaults are the main issue.

5 How to do it?

Most of economics can be summarized in four words: "People respond to incentives." The rest is commentary. (Landsburg, 1993)

Opponents and supporters of a structured mechanism for dealing with sovereign insolvency agree on the fact that this is a difficult endeavor. In what follows, I will abstract from most practical and political hurdles (for detailed proposals, see Bolton and Skeel, 2004, Kaiser, 2010, Paulus, 2012, and Raffer, 1990) and concentrate on the issue of delayed defaults.

In the literature there is a discussion on who should have the right to open the insolvency procedure (Berensmann and Herzberg, 2009): The debtor country? Creditors? The Court? I do not think that this is a fruitful way to approach the delayed defaults problem.

Delayed defaults can only be avoided by designing a system that provides incentives for avoiding unnecessary procrastination. As it would be hard to directly alter the incentives of policymakers in the crisis country, I focus on the incentive structure of

the international lender of last resort (ILOLR). After all, delayed defaults would be almost impossible without external financial support. Therefore, while the ILOLR should not be part of the resolution mechanism, delayed defaults can only be avoided if the resolution mechanism operates in close cooperation with the ILOLR.[24]

In the typical international debt crisis, countries that have problems rolling over their existing debts apply for ILOLR support (usually the IMF, sometimes complemented by other multilateral and bilateral lenders). In most cases, things go well and, thanks to some financing and some adjustment, the country does indeed regain market access (two examples are Brazil in 1998 and Turkey in 2001). Sometimes, however, the situation keeps getting worse, and, after several renegotiations of the original program, the ILOLR stops providing funds and the country stops servicing its debt (Argentina 2001, for instance).[25]

In my view, this system generates perverse incentives for both the ILOLR, which has incentives to continuously renegotiate the program, and policymakers in the crisis country, who have little to lose in gambling for redemption and inefficiently delaying the moment of reckoning.

5.1 Rules for avoiding procrastination

We can use the fact that defaults are normally preceded by a request for ILOLR support to establish a transparent procedure for triggering the restructuring process. One possibility is to follow the suggestion of Cordella and Levy Yeyati (2006) and Weder and Zettelmeyer (2010) and establish *ex-ante* criteria for accessing ILOLR support. In the discussion of Cordella and Levy Yeyati (2006) *ex-ante* criteria can be country-specific. In the example

[24] My views and ideas on this topic have been heavily influenced by Fernández-Arias's (2011) discussion of the links between ILOLR and sovereign debt restructuring. The ILOLR could be a single institution or the coordinated action of different multilateral or bilateral lenders.

[25] Alternatively, the multilaterals may continue to provide support, if and only if, the sovereign restructures some of its debt with commercial creditors (this is the case of Greece in 2012).

of Weder and Zettelmeyer (2010), instead, European countries that meet the Maastricht criteria can always draw multilateral support without any type of conditionality; countries that are above the Maastricht threshold, but below a higher threshold, can draw support with some form of conditionality; and countries that are above this upper threshold do not have access to multilateral support. If these countries lose market access, they will be forced to immediately restructure their obligations.[26] While this latter procedure has the advantage of being transparent and automatic, it does not recognize that different countries can sustain different levels of debt and deficits.

An alternative system that maintains the automaticity of the proposals by Cordella and Levy Yeyati (2006) and Weder and Zettelmeyer (2010) but allows for country and period heterogeneity could work as follows. Countries that approach the ILOLR for support are immediately subjected to debt, fiscal, and external sustainability analyses. Countries that are deemed to face a solvency problem will not receive any support and will be *de facto* forced to restructure their debts. If, instead, the situation appears to be sustainable, or if the country is deemed to be able to achieve sustainability in the medium term, the country will receive the necessary support. Support will come with the announcement of the country-specific criteria and thresholds used in the sustainability analysis. [27] If these thresholds are breached, support will be immediately and unconditionally withdrawn, and the country will be *de facto* forced into default (unless markets have suddenly become optimistic).

[26] Without some entity able to impose seniority, countries may be able to postpone the moment of reckoning by diluting their existing obligation. However, this ability of diluting existing debt will not last long. In any case, the ability to dilute is yet another reason why the ILOLR should be paired with a debt restructuring mechanism capable of imposing seniority.

[27] The criteria and thresholds can be very lax for countries with minimal insolvency risk (this is equivalent to lending without any type of conditionality) and tighter for countries that have greater risk of insolvency. Some countries may even pre-qualify for support like under the IMF Flexible Credit Line (FCL) facility

This proposal is different from standard IMF conditionality for at least two reasons. First, while standard IMF conditionality tends to include a large number of indicators, the approach proposed here would include a small number of easily verifiable indicators. Second, and more important, in IMF programs there is usually a sequentially bargaining game. The Fund starts by setting tough conditions which are then renegotiated if the crisis country overshoots the original targets. In my proposal there is full commitment. If a country overshoots the pre-established thresholds, the ILOLR is *forced* to withdraw support (it is also in this sense that my proposal is different from that of Cordella and Levy Yeyati, 2006).

If support is withdrawn and debt restructuring becomes necessary, the insolvency mechanism will start its work by verifying claims, allowing for interim financing, and imposing an immediate cessation of payments and stay on enforcement. Next, the mechanism will determine seniority among commercial creditors by following the guidelines of Bolton and Skeel (2004).

What about the seniority of the ILOLR? Should the ILOLR made whole as in the *status quo*, or should the ILOLR also get a haircut? I discuss this issue in the next section.

5.2 Incentives

In the current system, the ILOLR cannot credibly commit to stop providing financing if the crisis country does not fulfill the program's conditions. As a consequence, the ILOLR will start with tough (and perhaps unrealistic) conditions and then renegotiate along the way.

Inability to renegotiate imposes discipline on the crisis country and forces the ILOLR to carefully consider its initial decision. If the ILOLR sets conditions that are too tight, the program will fail and the ILOLR will stop providing support. If the ILOLR sets

conditions that are too lax (i.e., laxer than what is required to achieve sustainability), the program will also fail because the country will not regain market access.

The system described above is very rigid and does not accommodate unforeseen events, such as natural disasters or large external shocks (this is the standard rules-versus-discretion debate). However, if these unforeseen events were to make a country's debt unsustainable, debt restructuring would still be the only viable solution. Nevertheless, let us assume that an external shock that does not affect solvency leads to a breach of one of the program's thresholds (meaning that the threshold was too tight). In this case, the ILOLR would be forced to stop providing financing and possibly push a solvent country towards default. This concern could be allayed by endowing the ILOLR with escape clauses that kick-in in case of truly exceptional events (promoting the use of contingent instruments would be an even better solution).

Another possible objection relates to the fact that strict exit rules will make the ILOLR too, lax and actually amplify the incentives to gamble for redemption.[28] This problem can be addressed with an even more radical (some may say crazy) proposal: let the ILOLR participate in the haircut.

The position of the ILOLR in the seniority structure is essential for creating the right set of incentives. Rather than following the usual practice of making the ILOLR fully senior with respect to other creditors, I envision a system in which the seniority will depend on the difference between the market rate and the lending rate of the ILOLR (see Box 1 for details). I am well aware that my proposal is not politically feasible because the main IMF shareholders are will never agree to it. However, as mentioned in the introduction, policy pragmatism is not an objective of this paper.

[28] Laxer thresholds may reduce the likelihood of program failure without increasing the cost of failure. In a different set up, Powell and Arezomena (2003) derive a model in which an ILOLR that can credibly withdraw from a program can give more liquidity protection *ex-ante*.

On a more substantive point, most of my economist friends who read a previous draft of the paper did not like the idea of a haircut for the ILOLR. Their main concern seems to be that the possibility of a haircut would increase the ILOLR lending rate and, therefore, make the ILOLR less effective in fighting a liquidity crisis. Along similar lines, it is possible that a risk-averse ILOLR will always stand on the sidelines and never provide financing. I do not think that this will happen. Institutions have strong incentives towards self-preservation. It is lending that justifies the existence of the ILOLR, an ILOLR that does not lend will soon become irrelevant.[29] These are important issues that could be properly evaluated with a formal model.

Another possible objection relates to the fact that automatic exit *cum* haircut may push the ILOLR to join forces with the crisis country in producing false statistics aimed at showing that failed programs remain on track (*Quis custodiet ipsos custodes?*) I do not think that this is a serious problem because statistics can always be verified *ex-post* and the systematic production of false statistics would be incredibly damaging for the ILOLR's reputation.

5.3 Catalytic effects

It is possible to envision a system in which the seniority structure described above applies to any private or official lender who is willing to lend at the same terms as the ILOLR. ILOLR lending would thus have a true catalytic effect and mobilize sums that are much larger than those available under standard IMF-led programs.

One could even imagine a system of many ILOLRs, with the traditional ILOLR (the IMF) working together (or in competition) with new ILOLRs funded by emerging

[29] Whoever lived in Washington DC over 2003-2006 must remember how depressed Fund staffers were, and how a few years without a major crisis led to a substantial reduction in the organization's headcount.

economies. The threat of such a system of competing ILOLRs would provide strong incentives for addressing imbalances in the governance of the main multilateral financial institutions (it remains to be seen if, in the presence of incentives problems, ILOLR competition is optimal).

6 Concluding remarks

Gelpern (2013, p2) suggests that a credible proposal for a bankruptcy regime "must diagnose the most pressing sovereign debt problems it would solve, offer tools to solve such problems, and explain how these tools would improve on the status quo." I couldn't agree more.

In this paper, I start by arguing that the main problem with the status-quo relates to sub-optimally postponed debt restructuring exercises. Next, I suggest that the main objections to the creation of a structured mechanism for dealing with sovereign insolvency can be easily allayed. I conclude by sketching a proposal aimed at mitigating the delayed default problem. I realize that my proposal has several controversial elements, but I hope that its provocative nature will be useful for stimulating the discussion on sovereign debt restructuring.

Box 1: A Good haircut for the ILOLR

I what follows, I provide an example of how an international insolvency mechanism could allocate claims between commercial creditors and ILOLR. The example, therefore, does not focus on allocating seniority among commercial creditors.

My objective is to provide a simple illustration of how to allocate claims on the basis of differences in lending rates at times of crisis. As I want to illustrate the principle and not the details, my simple-minded example does not make justice to the complexity of the process and does not flesh out the exact allocation of claims and the application of the seniority system to stand-by facilities and other types of commitments which are different from outright loans.

Let us assume the following situation. On December 1, Ruritania (Lee Buchheit's favorite country, see Buchheit, 2011) applies for support from the ILOLR. Ruritania's situation is deemed to be conditionally sustainable. The ILOLR announces its sustainability thresholds and extends a two-year loan at a 5 percent interest rate; over October-November Ruritania's bonds with a two year maturity denominated in the same currency as the ILOLR loan were trading in the secondary market with a yield to maturity of 20 percent. After two years, Ruritania breaches the thresholds and needs to restructure its debt (I set two years to simplify the calculations). The insolvency mechanism verifies claims and finds that Ruritania has total debt of $10 billion: $9 billion with commercial creditors and $1 billion with the ILOLR. The insolvency mechanism decides that the country can only repay $7.5 billion. The average haircut is thus 25 percent.

To allocate this haircut, the insolvency mechanism starts by computing the present values of one dollar in two year using 5 and 20 percent discount rates. Next, it multiplies these present values (which are $0.91 and $0.7, respectively) by the stock of debt owed to the ILOLR and to commercial creditors (obtaining $0.91 billion and $6.3 billion, respectively) to obtain the total amount of discounted debt ($7.21 billion). As 0.91 is 12.6% of 7.21, the insolvency mechanism will allocate 12.6 percent of the available funds (which amount to $7.5 billion) to the ILOLR and the remaining 87.4% to commercial creditors. The ILOLR will thus receive $0.945 billion (a 6.5% haircut) and commercial creditors will receive $6.55 billion (a 27% haircut).[30]

[30] One could build a similar example by using spreads on the ILOLR cost of funds (in the case of the IMF, the margin on the rate of charge). Since the margin tends to be small, such an alternative would yield smaller haircuts for the ILOLR.

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