Sovereign Debt Disputes

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Abstract

This paper measures "debt disputes" between governments and foreign private creditors in periods of sovereign debt crises. We construct an index of government coerciveness, consisting of 9 objective sub-indicators. Each of these sub-indicators captures unilateral government actions imposed on foreign banks and bondholders. The results provide the first systematic account of debt crises that goes beyond a binary categorization of default versus non-default. Overall, government behavior and rhetoric show a strong variability, ranging from highly confrontational to very smooth crisis resolution processes. In a first analysis on the determinants of coercive behavior, we find political institutions to play a significant role, while economic and financial factors do much less so. These results open up an agenda for future research.

Keywords: Sovereign Default, Debt Restructuring, Crisis Resolution

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1. Introduction

Sovereign debt crises are usually regarded as binary events: A government is either in default or it is not. This paper develops a more sophisticated approach to analyze debt crises and debt renegotiations. We argue that the binary categorization for default versus non-default is overly simplistic, as it ignores the large variation in crisis resolution policies and related negotiation patterns. Our aim is to measure the wide range of debtor policies once a country has entered a default or debt restructuring process.

A comparison of the recent crises cases in Uruguay 2003 and Argentina 2001-2005 illustrates our main point. Argentina's government halted all of its debt payments for several years, refused to negotiate with creditors and enforced a unilateral debt exchange in 2005. In contrast, Uruguay avoided any missed payments, engaged in close creditor talks and arranged a voluntary debt exchange within just three months. We argue that these cases are not the same and, in principle, should not be treated as the same in empirical research.

To overcome the missing procedural knowledge on debt crises, we develop an index of government coerciveness, capturing confrontational debtor policies vis-à-vis private external creditors in times of debt distress. To construct this index we draw partly on criteria suggested by the IMF (1999, 2002) and the Institute of International Finance (IIF 2006). Specifically, we draw on the IMF's "Policy of Lending into Arrears", which made any emergency financing conditional on "good faith" efforts in resolving a debt crisis. Good faith debtor behavior, according to the IMF, includes a transparent debt workout process, early and continuous dialogues with creditors, and data sharing. A similar code of conduct was set up in the IIF's "Principles of fair debt restructuring", signed by over 30 countries and supported by the G7, the G20, the World Bank and the IMF. The IIF defines restructuring processes as fair, if debtor governments closely cooperate with creditors, if they adhere to information sharing, avoid unjustified capital controls, and if they resume partial or full debt service payments as soon as conditions allow.

Building on theses and further contributions we develop an index with 9 objective sub-indicators. Each sub-indicator captures unilateral government actions that governments impose on foreign banks and bondholders. They can be categorized into measures of "payment behavior" (4 sub-indicators) and measures of "negotiation behavior" (5 sub-indicators). The final index is additive, with a

minimum value of 1 (low coerciveness) and a maximum value of 10 (very high coerciveness) and is measured for each debt crisis year.

With the index of coerciveness we provide the first quantitative account on debt crises beyond a simple default dummy. More generally, we are the first to code debt renegotiation processes and related disputes between governments and private international creditors for a large sample of financial crises. The index also improves on earlier attempts to categorize debt crises or debtor coerciveness, by Cline (2004) or Roubini (2004) among others. A main advantage is that our coding approach is reproducible and comprehensive in scope. We conducted a systematic evaluation of more than 20,000 pages of articles from the financial press, of all main reference books and data sources on debt crises, and of numerous policy reports. Furthermore, the measurement approach can be applied to different eras of debt restructurings. The criteria chosen are general enough to compare debtor coerciveness across debt crises and restructurings of the last three decades, despite the shift from bank to bond financing and a changing role of actors such as the IMF. The resulting yearly database starts in 1980 and covers 251 crisis-year episodes in 31 developing countries that defaulted on sovereign debt.

In this paper we provide a detailed account of our measurement approach. Overall, the results show an impressive variance in government negotiation behavior and rhetoric towards private creditors, ranging from very confrontational behavior to very smooth crisis resolution processes. We portray main stylized facts and discuss what can be learnt from the categorization of government behavior. We also conduct a first explorative analysis on the determinants of debtor coerciveness. The regression results indicate that political and institutional factors are important for the degree of debt disputes, while many economic or financial factors are not. More specifically, we find most of the “rules of thumb” driving sovereign risk (Manasse and Roubini 2009) to be insignificant predictors of coerciveness. This opens up an agenda for future research.

The structure of the paper is as follows: Section 2 discusses the related literature and previous attempts to categorize debt crises. Section 3 presents the “Index of Government Coerciveness” and each of its 9 sub-indicators from a conceptual point of view. Section 4 outlines the coding procedure and the datasets that resulted from it. Section 5 briefly presents some descriptive statistics and the main stylized facts revealed by the data. Section 6 provides first evidence on the determinants of coercive behavior. Finally, section 7 concludes and gives an overview on research questions that could be tackled with the new datasets.

2. Analyzing Debt Crises: Previous Approaches

A large body of quantitative research analyses the causes and consequences of sovereign debt crises (see the recent review by Panizza et al. 2009). Most of this literature categorizes debt crises as binary events, often using a default or restructuring dummy based on data of Standard and Poor's (S&P) or from the World Bank.

S&P codes a government in default in case of (i) missed payments (default) on interest or principal of bonds or bank loans, (ii) and/or in case of a distressed debt exchange with terms less favourable than those in the original contracts (Standard & Poor's, 2007).[3] The second main list, compiled by the World Bank's Global Development Finance (GDF) team, provides dates and terms of sovereign debt restructurings since the early 1980s.[4] Some researchers have also combined these two key sources with additional data and definitions. Detragiache and Spilimbergo (2001), for example, look at the level of arrears to define default, while Reinhart, Rogoff, Savastano (2003) supplemented S&P data with information of Beim and Calomiris' (2001, pp. 32-36) qualitative list of debt crises events.[5]

Beyond these quantitative papers, there is an extensive body of more qualitative work on sovereign debt crises of the last decades.[6] Some related contributions also contain important proposals to categorize different types of debt crises and crisis resolution policies. Cline (2004), for example, suggests categorizing crises depending on the degree of private sector involvement (PSI), referring to the degree of burden sharing by private investors. He defines three categories of PSI, spontaneous, quasi-voluntary and involuntary PSI and links these categories to past crisis events and restructuring instruments. Frankel and Roubini (2001), Roubini (2004) and Roubini and Setser (2004) share Cline's approach to

[3] The annual list of S&P has been used by many researchers, including Borensztein and Panizza (2009), Gelos, Sahay and Sandleris (2004), Manasse and Roubini and Schimmelpfennig (2003), Kohlscheen (2007), Reinhart, Rogoff and Savastano (2003) and Van Rijckeghem and Weder, (2009).

[4] Authors relying on this list in recent work include Arteta and Hale (2008), Marchesi (2003) or Saiegh (2005).

[5] Another approach, by Pescatori and Sy (2007) uses bond spreads to define debt crises. A sovereign is defined as distressed, whenever the sovereign bond spread surpasses a critical threshold, such as 1000 basis points above U.S. Treasuries.

[6] Main contributions on the 1980s debt crisis are Cline (1995), Aggarwal (1996) and Rieffel (2003). Regarding the more recent cases, Roubini and Setser (2004), Andritzky (2006) and Sturzenegger and Zettelmeyer (2006) provide the most comprehensive accounts, including case studies. Historical analyzes on the past centuries of sovereign lending and default include Suter and Stamm (1992), Eichengreen and Lindert (1992), Stasavage (2003) or Tomz (2007).

categorize crises and PSI on a spectrum of voluntary and more involuntary types. Roubini (2004) states that defaults such as in Argentina, Russia or Ecuador should be regarded as very coercive, while cases with large bail-outs or semi-voluntary debt rollovers were "softer". In a similar vein, Andritzky (2006, p. 69) proposes a categorization of bond restructurings into (i) debt swaps (ii) soft restructurings and (iii) hard restructurings. All of these are important steps towards classifying crises and related government policies vis-à-vis private creditors. However, many of the proposed categories are not fully suitable for a consistent and replicable coding. The criteria and categorizations often lack precision and rest on researchers' own judgement of past debt crises. Many classification criteria are also tied to the instruments and restructuring mechanics prevailing at the time, making them difficult to generalize.

Taken together, the empirical literature on debt restructuring and crisis resolution is still developing. Most quantitative studies on debt crises limit the scope of government behavior to the question of whether there are missed payments or not. In contrast, very little is known on *how* countries resolve distress episodes and on *how* they restructure their debt with private creditors (see also Panizza et al. 2009). The qualitative work provides interesting insights in crisis mechanics, but the proposed categorisation of debtor policies is not systematic enough and has not been applied to a large number of cases. The aim here is therefore to develop a set of indicators of government behavior that are as objective and generalizable as possible and to code them for a large sample of cases. The result is the first systematic account of debt crisis resolution since the early 1980s.

3. The Index of Government Coerciveness

This section discusses the construction of the index of government coerciveness from a conceptual point of view. The index consists of 9 sub-indicators. These are grouped in two broad categories: (i) Four "Indicators of Payment Behavior" which capture government actions that have a direct impact on financial flows towards international banks or bondholders, and (ii) Five "Indicators of Negotiation Behavior" which capture government negotiation patterns and rhetoric.

Each sub-indicator is a dummy, which is coded 1 if the respective action by the government is observed and zero otherwise. In line with the related criteria by the IMF and the IIF, each indicator is measured for debt crisis years only (as defined below), so that we disregard episodes with no default or debt renegotiations. The 9 sub-indicators of coerciveness are the following:

Payment Behavior during Crises:

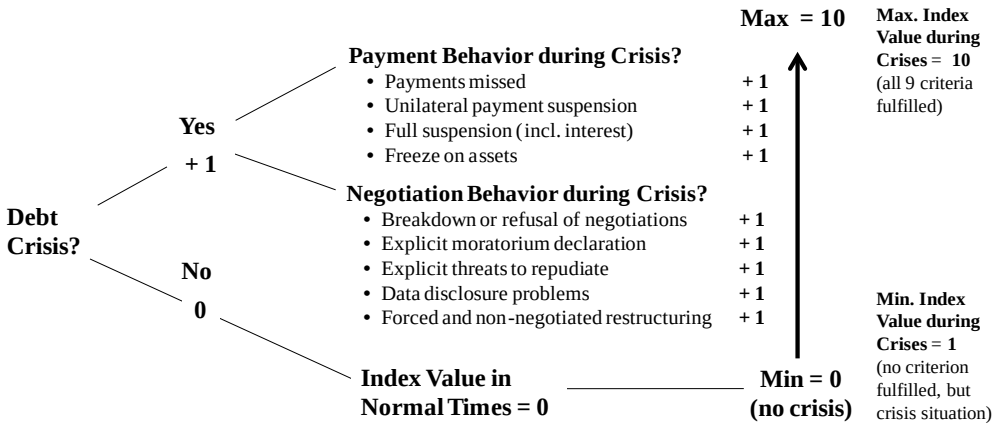
1) Payments missed (yes/no)
2) Unilateral payment suspension (yes/no)
3) Full payment suspension (incl. interest) (yes/no)
4) Freeze on assets of non-residents (yes/no)

Negotiation Behavior during Crises:

5) Explicit moratorium or default declaration (yes/no)
6) Explicit threats to repudiate on debt (yes/no)
7) Breakdown or refusal of negotiations (yes/no)
8) Data disclosure problems (yes/no)
9) Forced and non-negotiated restructuring (yes/no)

The final index is additive, meaning that all 9 dummy indicators are summed up. This results is an aggregate index ranging from 1 (very low coerciveness) to 10 (very high coerciveness) for each debt crisis year. As we are only concerned with government behavior during crises, we always code the index as 0 in "normal times". Figure 1 illustrates our index design graphically:

Figure 1: Index Design



To define what constitutes a "debt crisis" for our index and coding, we rely on the most widely used annual default list by Standard & Poor's (2007). We also extend their data in a few cases, because S&P does not account for debt renegotiation periods *without* missed payments (see the discussion in Arteta and Hale 2008). Formally, we thus define a year as a crisis episode (i) in case of a technical default as of S&P and/or (ii) when governments openly adopt debt restructuring efforts. For illustration, take the example of Uruguay in the late 1980s. S&P codes a default in 1985, 1987 and 1990 only, because the government was not technically in default in the years in between (1986, 1988, 1989). However, we know that,

despite no missed payments, the country was in severe debt distress throughout the whole period and engaged in ongoing restructuring talks with creditors. We therefore also code debtor behavior in these intermediate years, with no missed payments but ongoing negotiations.

In the following paragraphs, we present each sub-indicator in detail. The data sources and coding procedure are discussed in section 4. It should be underlined that we are concerned with government behavior towards private international creditors only. Coercive actions that solely affect official creditors, IFIs or domestic banks or investments funds are not taken into account.

3.1. Indicators of Payment Behavior

Payments missed

The first sub-indicator of payment behavior captures missed payments and, hence, the breach of debt contracts with private creditors. It is coded 1 whenever a government misses an interest or principal payment on its bonds or commercial loans. This includes cases in which governments arrange a temporary suspension or roll-over of debt payments, but it does not include missed payments that occur within the grace period foreseen in the respective debt contracts. Accordingly, it takes the value of 0 whenever the sovereign manages to restructure its debt before running into arrears. The indicator is a natural starting point to code default patterns, as it differentiates between pre-emptive restructurings, which tend to be well-received by creditors, and post-default restructuring cases, which are usually accompanied by strong creditor reaction and can involve substantial amounts of arrears (see also Bedford et al. 2005, ECB 2005, Finger and Mecagni 2007). Empirically, there are quite a few cases of pre-emptive restructurings, for example Chile in 1984, Algeria in 1992, Uruguay in 1988 and 2003 or Ukraine in 2000.

Unilateral payment suspension

The sub-indicator “unilateral payment suspension” is included to differentiate between outright defaults and “negotiated defaults” (Bulow and Rogoff 1989). Even in severe crises, officials can negotiate ex-ante by seeking preventive interim agreements, such as temporary debt roll-overs or other forms of bridge financing. Despite this, many payment suspensions occur fully unilaterally and without prior notice. Such non-negotiated defaults reveal coercive behavior and unwillingness to resolve the distress situation pre-emptively and in coordination with creditors. The sub-indicator “unilateral payment suspension” is coded 1,

whenever the government misses payments without prior agreement and/or if creditors are not notified of payment delays ahead of time. Although many payment suspensions are unilateral, there are a large number of exceptions: Roughly one third of debt suspensions were actually agreed on.

Full payment suspension (including interest)

The full suspension of interest payments has to be regarded as a separate indicator of payment behavior. A government that fully suspends all payments, including interests, sends a strong signal of its unwillingness to pay (see the argument by Cole, Dow and English, 1995). Note that partial or symbolic debt servicing was a key demand of creditors in crises of the 1980s, and even further back in history (Conklin 1998, IIF 2006, Sachs and Huizinga 1987, Sturzenegger and Zettelmeyer 2006).[7] Also the IIF Principles, require that "debtors should resume, to the extent feasible, partial debt service as a sign of good faith" (IIF 2006, p. 17). Despite these calls, some debtor governments openly reject to make any payments, including symbolic token amounts, thus signalling a particularly coercive stance towards creditors. The resulting sub-indicator is coded 1 in case the government suspends all payments (including interest/coupons) on sovereign bonds or public syndicated bank loans for more than 90 days in a given year.[8] Exemplary cases include Argentina from 2002 to 2005, Brazil in 1987, Bolivia in 1984 or Jordan in 1990.

Freeze on assets of non-residents

Debt crises and payment standstills may or may not be accompanied by additional capital or foreign exchange controls. Often, crisis related capital controls lead to an effective freeze of creditor assets in the country and should thus be regarded as a coercive government policy (see Cline 2004 or the related criteria in IIF 2006, p. 17). The sub-indicator is coded 1 for any kind of *additional* capital or exchange controls that are enacted during crisis years and that directly affect debt flows to foreign private creditors. Examples include capital controls that prohibit private domestic firms in the debtor country to make debt repayments to foreign creditors

[7] Partial interest payments were of concern to commercial banks during the 1980s, who aimed to avoid that their loans would be classified as "value-impaired,". Full moratoria obliged them to write off their positions and, thus, to take a loss on their books (Sachs and Huizinga, 1987).

[8] Note that the criterion is not fulfilled if debtors impose a mere ceiling of interest payments such as in Peru from 1986 to 1989 and Nigeria in 1986, or if payments are suspended on a fraction of debt only, such as in Russia in 1998. The Russian government drew a sharp distinction between the foreign debts it had inherited from the Soviet Union and those borrowings it had assumed since becoming an independent sovereign country. While the government continued to service its post-1992 Eurobonds throughout the crisis, it fully suspended payments on its restructured Soviet-era debt.

(implemented e.g. by Argentina in 1982 or 2002, by Russia in 1998 or by Brazil in 1989). In other cases, governments enacted harsh exchange controls that led to a notable reduction of private sector debt repayments to foreign banks or bondholders (e.g. in the Philippines and Venezuela in 1983, or Ukraine and Pakistan in 1998).

3.2. Indicators of Negotiation Behavior

Breakdown or refusal of negotiations

A natural starting point for coding a government's negotiation behavior is to focus on delayed and failed restructuring talks. Close dialogue with creditors and continuous negotiations are generally seen as crucial elements of "fair" debt restructurings (IIF 2006, IMF 1999, 2002). In line with theoretical work on debt renegotiations and wars of attrition (e.g. Benjamin and Wright 2009), we measure government induced negotiation delays directly. The indicator is coded 1 in cases where (i) defaulting governments refuse to enter into negotiations with creditors, *or* (ii) government actions cause a breakdown in debt negotiations for more than three months in a given year. Lengthy negotiations delays are common and have occurred in the context of elections (e.g. Philippines 1992, Dominican Rep. 1994 and 2004), when governments refuse to adopt an IMF adjustment program (Nigeria 1984, Venezuela 1983) or when governments rejected to assume a formal guarantee on its sovereign debt stocks (Morocco 1983-85, Russia 1993-95, Bulgaria 1990-92). In all such circumstances, the delay in the negotiation process is a clear sign of unilateral government behavior vis-à-vis creditors. Note that delays caused by holdout creditors or inter-creditor disputes are not taken into account, but were coded separately (see Trebesch 2008).

Explicit moratorium or default declaration

Most sovereign defaults and de facto moratoria occur "silently", without public announcement or strong rhetoric. However, there have been a number of instances in which moratoria where proclaimed publicly, shrugging off international creditor demands, underlining a government's national sovereignty or highlighting domestic expenditure priorities. Official default declarations usually take place in an already conflictive situation and can be seen as analogous to a declaration of war. Drawing on an extensive literature on international conflicts (e.g. Jones et al. 1996, Guisinger and Smith 2002), such official declarations are thus coded as coercive government behavior. The sub-indicator takes the value of 1 whenever a key government actor publicly proclaims the decision to default.

The most famous example of a recent "war" declaration towards foreign creditors was the moratorium announcement of Argentine interim President Adolfo Rodriguez Saá on 24 December 2001, which was "celebrated in Congress as a victory" (Sturzenegger and Zettelmeyer, 2006, p. 182). Unilateral declarations of this type have also been made in a number of earlier cases, for example in Ecuador in 1987 and 1999, Bolivia in 1984, Peru in 1985 or Russia in 1998. An interesting case is Brazil, which first declared an official moratorium in 1987 (coded as 1), which resulted in a drastic drop of international capital flows to the country. After the government returned to the negotiation table and resumed payments in 1988, it again fully suspended payments in 1989. This time, however, the government was keen to avoid some of the drastic consequences of its first moratorium and repeatedly assured that it had not officially declared a moratorium and that all debt would eventually be paid back. The press at the time termed Brazil's silent payment suspension as a "white moratorium" (coded as 0 here).

Explicit threats to repudiate on debt

A further indicator of negotiation behavior captures open threats, which can be an important strategic element in debt renegotiations (Bulow and Rogoff 1989). The indicator included here is coded 1 whenever a key government actor[9] publicly threatens to repudiate on debt, e.g. via an indefinite moratorium. In the spirit of related theoretical models, such public statements can be seen as a threat of shifting into "autarky", with a full cancellation of outstanding debt (e.g. Kletzer and Wright 2000, Yue 2010). Threats to repudiate can be regarded as a clear signal of non-cooperative debt policies. They are often issued by populist governments, and tend to be widely reported in the press and public debate. One interesting example is Chile in 1986, where Pinochet responded to US human rights pressure with a threat to permanently repudiate on US bank loans. Other examples of threats to repudiate on debt include Jordan in the wake of the first Iraq war or Bolivia in 1983/84.

Data disclosure problems

Eaton (2004), Gai et al. (2006) and Ghosal and Miller (2003) underline the crucial role of information asymmetries in debt crisis resolution. Private creditors need accurate macroeconomic and financial data to evaluate restructuring offers and a government's capacity to pay. Accordingly, information sharing is regarded as an

[9] Namely the President, the Prime Minister, the chief debt negotiator or Ministers of Finance, Economy or Planning.

important element of faithful crisis resolution (IMF 1999, 2002, IIF 2006). Despite this, there have been frequent disputes on data disclosure in past crises, often about reserve and debt related data. The sub-indicator "data disclosure problems" is coded 1 (i) whenever governments explicitly refuse to provide information on crucial negotiation related issues, or (ii) if there is an open dispute with creditors due to grossly inaccurate data. Data disclosure disputes occurred during the 1980s e.g. in Brazil in 1987, Nigeria 1983, or the Philippines in 1983, as governments rejected to disclose the true amount of exchange reserves or debt arrears. There are also cases like Peru in 1996, where President Fujimori refused to reveal the government's unofficial debt buy back operations, calling it a matter of "state security". More recently, the government of Russia clashed with bondholders in 1999 for rejecting to share key details of the restructuring offer, even after it was launched.

Forced and non-negotiated restructuring

The last sub-indicator differentiates between unilateral debt restructurings and restructuring agreements that are the result of bargaining and negotiation. In the run-up to a debt exchange deal, governments can involve creditors ex ante by engaging in consultations and trying to gain their acceptance before launching an offer.[10] The last decades, however, have shown that restructurings can also be enforced unilaterally or launched without any prior consultations on terms and conditions. Such debt exchanges without preceding negotiations are an obviously coercive government strategy. The indicator included here captures instances (i) where the government enforced a restructuring or (ii) where the government issued a non-negotiated offer on a final agreement. Examples of forced restructurings include Peru 1986 and Nigeria 1990/91, where governments unilaterally decided to lower the interest rate on debt, or a case such as Argentina in 1982, where the government unilaterally restructured debt owed by the private sector without any prior consultations. Similarly, one can regard the debt exchange of Argentina in 2005 as unilateral, as the government refused to consult creditors on the terms of the exchange and ultimately launched a take-it-or-leave-it offer.

[10] The IMF (2002, p. 10) states that a debtor government "should provide creditors with an early opportunity to give input on the design of restructuring strategies and the design of individual instruments". Similarly, the IIF (2006, p. 17), demands that "restructuring terms should be subject to a constructive dialogue focused on achieving a critical mass of market support before final terms are announced."

3.3. Accounting for the Change from Bank to Bond Restructurings

There are many differences between debt crises in the 1980s and more recent ones. Sovereign lending during the 1970s and 1980s was dominated by syndicated bank loans, while the 1990s saw a rise of bond financing, leading to substantial changes in crisis resolution and restructuring techniques. Despite these differences, we share the view of William Cline and others that a general categorization of debt crises over time is both possible and desirable.

The above criteria were explicitly designed so as to accommodate the well-known changes in debt restructuring characteristics. The exact type of data disclosure problems, asset freezes or threats might have changed over time, but the general idea to capture such events is the same for both 1980s and more recent cases. Also other indicators such as that on payment behavior, on negotiation breakdowns or on non-negotiated restructurings should not be seriously distorted by changes in debt instruments or creditor characteristics.

4. Coding and Resulting Datasets

This section describes the information sources and the procedure for coding the above 9 variables, as well as the datasets that result from it.

4.1. Case Coverage

Our sample covers 31 developing and emerging market countries that defaulted since 1980, resulting in 251 yearly debt crisis events. Table 1 in the Appendix provides an overview on the crisis periods included.

We arrive at our sample in the following way: We first identify all defaults and restructurings between sovereign states and private external creditors in the period 1980 to 2007, using the comprehensive lists by IIF (2001), S&P (2007) and in the World Bank's GDF reports (World Bank 2003, 2004 and 2006). Due to our focus on private creditors, we exclude the poorest, least developed countries who had only limited access to credit from private creditors. Specifically, we exclude those highly indebted poor countries (HIPCs) that are eligible for large-scale support within the IMF's and the World Bank's HIPC debt relief initiative. Since the early 1980s, debt renegotiations in these poorest countries have been dominated by talks with donors and multilateral creditors including the Paris Club, while commercial creditors play no, or only a marginal role. This makes it extremely

difficult to draw any meaningful conclusions about public-private debt negotiations. Beyond HIPC cases, we also leave out restructurings that took place under highly exceptional circumstances, namely Iraq's 2005/2006 debt exchange and restructurings following the dissolution of the Socialist Republic of Yugoslavia (agreements reallocating Yugoslavia's debt to the follow-up republics of Bosnia and Herzegovina, Croatia, Macedonia, Slovenia, Serbia and Montenegro). These restructurings were linked to state succession processes and not directly associated to a financial crisis or debt distress. Lastly, we also had to drop the cases of Cote D'Ivoire, Cuba, Gabon, Iran, Jamaica, Kenya, Paraguay, Trinidad and Tobago and Vietnam, due to missing information on the debt restructuring process with private creditors. In these cases, official creditors (i.e. multilateral creditors or Paris Club creditors), played the dominant role in crisis resolution, with amounts owed to private creditors being comparatively small.

Overall, our sample covers almost the entire universe of sovereign default and restructuring relevant to financial market participants. The cases make up for more than 96% of all sovereign debt restructured with banks and bondholders between 1980 and 2007 (using USD figures from IIF, 2001 and further source for deals after 2000). Put differently, we cover more countries and go further back in time than most existing datasets on emerging market debt and default used in related research. This includes JP Morgan's Emerging Market Bond Index (EMBI) which started only in 1993 (covering 14 countries), as well as sovereign ratings data by Moody's and S&P, which have broad country-coverage only since the early 2000s.[11]

4.2. Sources and Coding Procedure

The coding of the 9 sub-indicators in each crisis year was systematic, and based on a wide array of sources. The most rewarding source turned out to be the print media. Financial crises are highly publicized events and the financial press provides extensive and detailed day-to-day coverage on debt renegotiations, missed payments and restructuring processes, including coverage on government rhetoric and considerable behind-the-scenes information. We therefore followed the example of other researchers in the debt crisis literature, notably Ozler (1993), Aggarwal (1996) and Arteta and Hale (2008), and relied on newspapers to collect much of the desired information.

[11] In 1990, Moody's provided ratings for 13 emerging market sovereigns, while S&P covered 8.

More precisely, we used the online news database *factiva* and restricted our standardized search to six flagship media sources: The Financial Times, Reuters, the Wall Street Journal, Dow Jones News Service, the New York Times and Associated Press. [12] The search algorithm applied is "countryname w/10 debt". It identified all articles in which the respective country name appears a maximum of ten words away from to the word "debt". Based on this search algorithm, we then extracted all relevant articles into backup-documents for each crisis episode in order to analyze them. Altogether, we gathered and systematically evaluated more than 20,000 pages of articles from the financial press.

We cross-checked and complemented the press coding with crisis information contained in all standard reference books in the field (Cline, 1995; Aggarwal, 1996; Boughton, 2001; Roubini and Setser, 2004; Rieffel, 2003; Andritzky, 2006; Sturzenegger and Zettelmeyer, 2006). Much of the case insights in these important book publications are based on expert knowledge and detailed policy documents, thus complementing the newspaper sources with hands-on information. We also took into account a series of reports and papers by international financial institutions on the issue (Williams et al. 1983 ; Kincaid et al., 1985 ; Laursen and Fernandez-Ansola, 1995; Piñón-Farah, 1996 ; IMF 2001, 2003, 2006, ECB 2005), as well as some country-related publications such as Buchheit and Karpinski (2007), IMF and World Bank Country Reports or IMF Poverty Reduction Strategy Papers. Further valuable sources were the comprehensive lists of debt restructurings by Stamm (1987) and the IIF (2001) and the list of major policy events in developing countries by Henry (1999).[13] The sources for each coding decision are cited in detail in the datasets.

For the sub-indicator "payments missed" and the sub-indicator "suspension of interest payments" we also relied on data on interest payments and arrears from the GDF 2007 database. For the indicator on asset freezes we drew on the IMF's "Report on Exchange Arrangements and Exchange Restrictions" by systematically evaluating the annual volumes from 1980 to 2007. Table A3 in the Appendix gives an overview on sources used for each sub-indicator.

[12] Factiva covers the following sources in full text: *Associated Press* Jan. 1985 - Sept. 2003, *Dow Jones News Service* June 1979 - today, *Reuters News* 1987 - today, *Financial Times* Jan. 1982- today, *New York Times* 1980 - today, *Wall Street Journal* Jan. 1984 - today. For the early 1980s we also retrieved some articles of the NYT and abstracts of the WSJ from LexisNexis. In a few cases where information was less complete, we verified our coding based on additional articles from other renowned sources such as the Washington Post, the BBC, the LDC Debt Report or publications like Latin American Weekly.

[13] Stamm (1987) provides a very detailed list of restructurings between 1956 and 1987 including information on the negotiation process with official and private creditors. Henry (1999) provides a list of major policy events in developing countries from the mid 1970s to the mid 1990s (see also Henry 2000).

The entire evaluation was completed over a period of 12 months by a team of researchers and student research assistants. To minimize errors, each case was coded independently by at least two people on the basis of the same sources and procedures. The coding results for each sub-indicator were discussed with the entire team only at a final stage. Generally, the very rich press coverage on the crises allowed evaluating government actions and related facts and events based on more than 3 and in some cases up to 20 or 30 news sources. To guarantee transparent and replicable coding, we justify each coding decision by summarizing the underlying facts in one or two sentences. The explanatory sentences are then backed with precise quotes from the original press articles, books or papers.

The coding resulted in two datasets, which were generated in the same coding process. Subsection 4.3. describes our year-by-year dataset, which covers the 9 indicators for every debt crisis year (year-by-year dataset). As an alternative, we provide a second dataset, described in Section 4.4., which codes the 9 indicators with regard to each finalized restructuring agreement (agreement-based dataset).

4.3. Year-by-Year Dataset

The year-by-year dataset is our primary dataset. It codes the 9 sub-indicators of government coerciveness for each crisis year in our sample (see Table A1 in the Appendix). The sub-indicators are coded as 1 if the respective action could be observed towards foreign private creditors (banks and/or bondholders) and 0 if not. The resulting index value thus indicates the stance of a government towards all of its foreign private creditors in debt crises years since 1980.

The main advantage of this dataset is that it captures year-by-year fluctuations in government behavior. The data allow analyzing the dynamics at play, possibly in a cross-country panel on an annual level. Note that we explicitly consider coercive actions that are ongoing or not revoked. This is relevant for the case of a moratorium declarations or newly enacted capital controls. We continue to code these as 1, as long as they are not withdrawn or phased out. In contrast, variables such as forced restructurings or explicit threats will only be coded for those years in which a restructuring or a threat actually took place.

4.4. Agreement-based Dataset

The agreement-based dataset measures government behavior with regard to individual restructuring agreements. We cover 101 sovereign debt restructurings in 31 defaulting countries since 1980 (see Table A2 in the Appendix). Because of the focus on individual agreements, we explicitly disentangle government behavior towards types of creditors (banks, bondholders, others) affected by the respective agreements. We thus code which coercive actions were imposed on a group of creditors prior to a restructuring with that group. The sub-indicators take the value of 1 if the coercive action could be observed in any year in the run-up to an agreement. With a view to the above, the relevant time span for this coding process starts with the default event (or, in case of a pre-emptive restructuring, with the beginning of debt negotiations) and ends with the successful debt exchange. Note that, for descriptive purposes, we only include deals that are ultimately implemented, but exclude interim or principal agreements. This makes the index values comparable across restructurings.

To better understand the difference between the first and second dataset, take the example of the Argentinean debt crisis from 2001 to 2005. The year-by-year dataset provides one index value for each year between 2001 and 2005, thus aggregating coercive actions towards all of Argentina's foreign private creditors. The agreement database, instead, provides an index value for each restructuring deal and creditor group in this period, namely the Megaswap of June 2001, the domestic bond restructuring in Oct. 2001 and the global bond restructuring completed in 2005.

The main advantage of the agreement-based dataset is that it allows to differentiate between various agreements in a given crisis period, even if they occurred in the same year. This is particularly relevant for recent debt crises, which often featured several restructurings in one year, with separate deals for different creditor groups (domestic bondholders, international bondholders or commercial banks). A second main advantage is that one can now relate the degree of coerciveness to deal-specific characteristics such as the number and composition of creditors, the size of creditor losses ("haircuts") or post-restructuring events such as creditor litigation or holdouts. Furthermore, the differentiation by creditor and restructuring type also reveals a number of novel stylized facts, as will be seen in the next section. [14]

[14] Note that the coerciveness data, differentiated by creditor group, can also be provided on a yearly level. Similarly, we can also provide index values for restructurings that have not been finalized.

5. Coding Results and Stylised Facts

When comparing our results to insights and analysis in the existing literature, our index appears to be a valid proxy for government behavior; "Tough" negotiatons, "hard" restructuring cases and non-cooperative behavior as reported for specific crises by Aggarwal (1996), Cline (1995 and 2004), Boughton (2001), Roubini and Setser (2004) or Andritzky (2006) have a high index value (of at least 5) according to our coding results. Additionally, our categorization of prominent cases corresponds to casuistic evidence in the press and to the judgements of a number of experienced Wall Street and policy experts in New York and Washington D.C. (related interviews were carried out in early 2007).

The following figures and tables provide some descriptive statistics and stylized facts derived from the country-year dataset of 251 debt crisis years. First of all, we find that each sub-indicator displays a high degree of variability (see Table 1). The sub-indicators can also be seen as sufficiently independent from each other, given that their pair wise correlation is relatively low in most cases (see Table A4 in the Appendix).

Table 1: Descriptive Statistics for each Sub-Indicator during Debt Crises

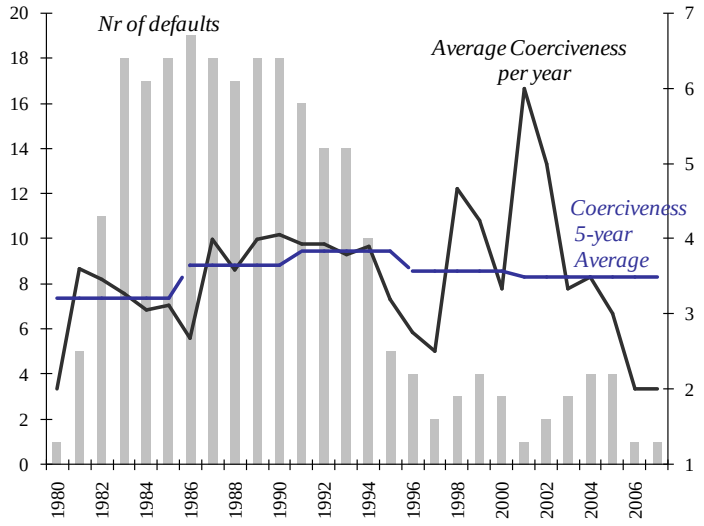
Variable	Observations	Frequency of value 1	Mean	Std. Dev.
Payments Missed	251	191	0.76	0.43
Unilateral Suspension	251	145	0.58	0.49
Full Suspension	251	66	0.26	0.44
Freeze on Assets	251	27	0.11	0.31
Negotiation Breakdown	251	107	0.43	0.50
Explicit Declaration	251	30	0.12	0.33
Threats to Repudiate	251	41	0.16	0.37
Data Disputes	251	20	0.08	0.27
Forced Restruct.	251	14	0.06	0.23

Over half of our yearly sample consists of default events from the 1980s. This reflects the fact that the 1980s saw a global wave of debt defaults in developing countries and that debt crises of the 1980s and 1990s were particularly protracted (See Chuhan and Sturzenegger, 2005). Contrarily, the debt crises episodes in recent years were usually quite short, spanning a period of one or two years only.

As can be seen in Figure 2 below, the average degree of coerciveness is fairly stable, with *no clear trend over time*. The average index value, plotted in five-year intervals, is almost flat and ranges between 3 and 4. When looking at the past three decades in more detail, it is evident that sovereign defaulters behaved

somewhat less coercively during the 1980s (average of 3.38) compared to the era of Brady deals from 1990 to 1997 (average of 3.79) and the post-Brady era of bond restructurings from 1998 to 2006 (average of 3.73). Specifically, there is a kink in average coerciveness in 1987, a point in time when many debtor countries in the sample were already in default for several consecutive years. It is apparent that the average index value shows a much more volatile pattern after 1998. As argued by Panizza et al. (2009), the higher index volatility in recent times might be due to changes in creditor composition or in the international legal environment. An alternative explanation is that outlier cases, such as Argentina 2002-2005, had a more pronounced impact on the index average in recent years, simply because the frequency of debt crises has decreased.

Figure 2: The Coerciveness-Index over Time



Regarding the *regional distribution*, crises in Latin America and the Caribbean clearly dominate our sample. We coded 15 defaulting countries in Latin America and the Caribbean and 16 countries in the rest of the world. Keeping in mind the large difference in the number of observations, governments in Latin America showed a somewhat more coercive negotiation stance (with an average index value of 3.73), compared to all other defaulting countries (3.27).

We also calculated the *index averages for each country* separately. This yields some additional insights, as can be seen in Table 2. Countries like Chile, Mexico, Morocco or Uruguay showed a cooperative stance throughout extended periods of sovereign debt distress. In contrast, governments of countries like Russia, Nigeria or Peru displayed a much higher average degree of coercive behavior. An interesting stylized fact is that countries that opted for unilateral behavior during the commercial bank restructurings of the 1980s, also tended to behave non-

cooperatively during debt renegotiation periods of the 1990s and in more recent cases of sovereign bond restructurings (e.g. Ecuador, Argentina). We thus find serial patterns of coercive behavior, which can be seen as a complement to the prominent concept of "serial defaults" by Reinhart, Rogoff and Savastano (2003).

Table 2: Ranking Coerciveness by Country

Most Coercive (Average for all Crisis Years since 1980)

	Average Index Value	Years in Default (between 1980 and 2007)
Peru	5.40	15
Argentina	5.24	17
Nigeria	4.90	10
Bolivia	4.50	14
Jordan	4.40	5
Russia	4.39	10

Least Coercive (Average for all Crisis Years since 1980)

	Average Index Value	Years in Default (between 1980 and 2007)
Uruguay	1.20	10
Chile	1.5	8
Morocco	1.88	8
Algeria	1.83	6
South Africa	2.00	5
Mexico	2.44	9

Note: Countries with less than 4 years in default (e.g. Belize, Dominica) are excluded from the ranking.

It is also worth to highlight a number of *particularly coercive crisis cases* listed in Table 3. The well known case of Argentina from 2001 to 2005 displays an exceptional degree of coerciveness, as the government officially declares a default, sticks to the proclaimed moratorium by stopping all payments to its bondholders for 4 years, freezes foreign assets and rejects any meaningful negotiations. In the case of Brazil of 1987, President Sarney decides to declare a unilateral moratorium and breaks off any negotiations with banks amid a serious political and economic crisis. The moratorium is accurately prepared, to a degree that Brazilian oil tankers were ordered to leave foreign ports so as to prevent their seizure.[15] After massive capital flight, a sharp drop in foreign investments and heavy political intervention by the United States, President Sarney agrees to a series of cooperative interim agreements with official and private creditors in 1988, and publicly admits that his unilateral debt policy had been a mistake ("the

[15] Financial Times, 23 February 1987.

worst the government had ever committed").[16] Nevertheless, after a devastating result for his party in municipal elections, Sarney again adopts a largely unilateral stance towards international creditors in 1989.

Table 3: Particularly Coercive Cases (Index Value of 7 or Higher)

Country	Years
Argentina	2002 - 2005
Brazil	1987 and 1989
Dominican Rep.	1989 - 1990
Nigeria	1990 - 1991
Peru	1985 – 1989
Russia	1998

Peru from 1985 to 1989 is a further prominent case of coercive government behavior. Already in his inauguration speech as President in 1985, Alan Garcia declares his intention to impose a ceiling on debt payments and to abort negotiations with the IMF and private creditors. Until the end of his term in 1989, Garcia remains "the bad boy of the international debt problem"[17] and adopts an entire range of coercive actions.

Also the agreement-based dataset offers a number of novel insights, especially with regard to *restructurings since 1998*. Table A5 in the Appendix lists 13 sovereign restructurings of foreign currency bonds and 6 restructurings involving domestic currency bonds. Note that these latter domestic restructurings were coded, despite our general focus on foreign creditors. The reason is that, in these cases, a large share of the domestic bonds was actually held by foreign investors, which were thus directly exposed to the domestic restructuring process. The coding results show foreign bond restructurings to have very low index values, besides three highly coercive outlier cases: Argentina (2005), Ecuador (2000) and Russia (2000). In comparison, we find the negotiations with domestic creditors and banks to show significantly higher degree of coerciveness. Even in those cases where negotiations with different creditor groups ran in parallel, we find governments to impose less coercive actions on foreign bondholders (Dominican Republic, Moldova, Pakistan and Russia). Overall, it appears that governments have been more conciliatory to foreign bondholders than they were to foreign banks in recent years.

[16] Financial Times, 4 February 1988.
[17] Wall Street Journal, 24 March 1986.

Finally, some words on the link between creditor losses ("haircuts") and government coerciveness. Due to the lack of reliable haircut estimates for a large sample of cases, we focus only on post-1998 restructurings, for which estimates were provided by Sturzenegger and Zettelmeyer (2007, 2008). A first look at the data indicates a high positive correlation between haircut size and the degree of coerciveness (see Panizza et al. 2009). Nevertheless, there are important outliers. One example is the international bond restructuring in Ecuador, which is characterized by a high degree of coerciveness (index value 6) but which only involved a haircut of about 30 percent. A more detailed analysis, ideally with data going back to the 1980s, is needed to thoroughly understand the relation between government negotiation behavior and actual restructuring outcomes.

6. Explaining Coerciveness

To go beyond mere stylized facts, this section conducts an exploratory analysis on the determinants of coerciveness. Our aim is to provide first indicative insights to the following two questions: (i) What is the role of economic and financial factors for a government's negotiation stance? (ii) Which institutional or political variables are associated with more or less coercive behavior? For brevity, we do not conduct an in-depth investigation, nor do we embark on a detailed discussion on underlying theories or the mechanisms at work. Instead, we see our first results as an important basis for future research on financial crisis resolution.

To estimate the determinants of coercive government behavior in debt crises, we use the annual index values as dependent variable (year-by-year dataset). Given the ordinal character of the index (ranging from 1 to 10) we employ standard ordered probit models. The set of explanatory variables is derived from a large theoretical and empirical literature. Regarding financial and economic variables, we build on Manasse and Roubini's (2009) widely cited paper on "Rules of Thumb" of sovereign debt distress. Using regression tree analysis, the authors identify a ranking of key predictors of sovereign default and debt distress. We fully rely on this ranking to set up a baseline specification in our analysis of debtor coerciveness. Specifically, we use annual data on the ratio of total external debt to GNI, the ratio of external short term debt to reserves, the log of annual inflation (CPI, in %) and annual growth of real GDP (in %). The data on external debt figures is taken from the Word Bank's 2008 Global Development Finance database, while growth and inflation data comes from the 2008 version of the World Development Indicators. We also use previously unavailable data on the onset of a banking crisis from Leaven and Valencia (2008). We predict a higher

debt to GDP ratio, liquidity constraints of servicing short-term debt, high inflation and lower growth to be associated with higher debtor coerciveness. Similarly, we expect banking crises to increase the likelihood of coercive government behavior. Following standard practice in the literature on default determinants, all economic variables are lagged by one year, as this reduced potential endogeneity bias.

In a second step, we focus on those political and institutional variables that have been shown to influence economic policymaking, and the occurrence of financial crises and default. Specifically, we analyze the role of presidential versus parliamentary regimes (Kohlscheen 2007, Persson and Tabellini 2003), regime type (democratic versus autocratic) (Persson 2002, Tomz 2002), constraints on the executive (Acemoglu et al. 2003, Van Rijckeghem and Weder 2009), and government orientation (left versus right) (Stasavage 2007). In line with Kohlscheen, who shows that presidential regimes are five times more likely to default, we expect debtors with presidential regimes to behave more coercively. As to the regime type and executive constraints, the existing literature does not give much ground for strong theoretical priors. Some authors have shown democratic institutions to increase sovereign risk and the likelihood of default (e.g. Saiegh 2005), while others find the opposite effect (e.g. Van Rijckeghem and Weder 2009). Regarding government polarization, we expect left governments to act more coercively, in line with much of the related literature (see e.g. the discussion in Rijckeghem and Weder 2009). We draw on widely used datasets to proxy the set of political institutions we want to include. To construct a dummy for (strictly) presidential regimes we use the SYSTEM variable from the 2008 update of the Database of Political Institutions (DPI) by Beck et al. (2001). The DPI is also the source for the dummy of "left governments", which takes the value of 1 in case a government's economic policy is coded as left-wing in the EXECRLC variable. The dummy for democratic regimes comes from Cheibub et al. (2010), while the variable of constraints on the executive (XCONST) is taken from the 2008 release of the Polity IV dataset.

Table 4 shows the results of regressing the coerciveness index on the lagged economic and political variables and a set of cut-points. We find economic variables to matter surprisingly little (column 1). While all variables have the expected sign, only the ratio of external debt to GNI is a robustly significant predictor of coerciveness. Other "usual suspects" of debt distress are insignificant or not robust to specification changes. Not even the banking crisis dummy, a reliable indicator for the severity of a crisis, shows a significant sign. This overall result remains even if we substitute or complement variables in specification 1 with other proxies of debt distress, e.g. the ratio of short term to long term debt, a

measure on global interest rates fluctuations (LIBOR), or debtor country terms of trade.

Table 4: Results on the Determinants of Coerciveness

	(1)	(2)	(3)	(4)	(5)
	Economic Factors	**Presidential Regime**	**Regime Type**	**Executive Constraints**	**Government Polarisation**
	coef/se	**coef/se**	**coef/se**	**coef/se**	**coef/se**
Ext. Debt / GNI	0.357**	0.611***	0.398**	0.423**	0.377**
	(0.163)	(0.214)	(0.162)	(0.170)	(0.165)
Short term Debt/ Reserves	0.030	0.028	0.042**	0.017	0.026
	(0.019)	(0.022)	(0.019)	(0.019)	(0.019)
Inflation (annual, in %)	0.000**	0.000	0.000*	0.000	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth (annual, in %)	-0.004	0.011	-0.007	-0.022	-0.004
	(0.012)	(0.017)	(0.012)	(0.014)	(0.012)
Banking Crisis	0.171	0.042	0.185	0.145	0.153
	(0.252)	(0.363)	(0.267)	(0.256)	(0.247)
Presidential Regime		0.567**			
		(0.246)			
Democracy			0.534***		
			(0.148)		
Executive Constraints				0.190***	
				(0.045)	
Left Government Dummy					-0.129
					(0.159)
/cut1	-0.527***	0.057	-0.171	0.100	-0.540***
	(0.170)	(0.291)	(0.194)	(0.274)	(0.177)
/cut2	-0.087	0.389	0.283	0.470*	-0.151
	(0.164)	(0.295)	(0.191)	(0.280)	(0.170)
/cut3	0.353**	0.884***	0.740***	1.070***	0.302*
	(0.162)	(0.302)	(0.194)	(0.293)	(0.168)
/cut4	0.780***	1.346***	1.183***	1.542***	0.737***
	(0.165)	(0.316)	(0.200)	(0.303)	(0.172)
/cut5	1.379***	2.005***	1.799***	2.222***	1.342***
	(0.184)	(0.333)	(0.215)	(0.326)	(0.190)
/cut6	1.859***	2.452***	2.291***	2.722***	1.825***
	(0.205)	(0.344)	(0.238)	(0.351)	(0.210)
/cut7	2.193***	2.781***	2.634***	3.079***	2.162***
	(0.228)	(0.369)	(0.254)	(0.359)	(0.233)
/cut8	2.744***	3.320***	3.200***	3.599***	2.716***
	(0.331)	(0.452)	(0.347)	(0.446)	(0.337)
Pseudo R2	0.011	0.020	0.026	0.041	0.012
Number of observations	213	131	213	152	209

Results ordered probit estimation. The dependent variable is the index of government coerciveness on a scale of 1 (very low) to 10 (very high). ***/**/* denote significance at a 1/5/10 per cent level respectively. Standard errors in parentheses. The specification of column (2) is estimated in a subsample of democracies.

Another surprise is the low level of R^2. The set of (time-varying) economic and financial variables can explain only a small fraction of the variation in our dependent variable. Running the specification of column 1 in a standard probit model with "sovereign default" as a binary dependent variable (using S&P data), yields a R^2 more than ten times as large. All of this indicates that the determinants

of coerciveness during default differ substantially from the determinants of sovereign default per se (compare also Ciarlone and Trebeschi 2005, Detragiache and Spilimbergo 2001).

Turning to political variables, we find presidential regimes to show a significantly higher degree of coerciveness (column 2, estimated in a subsample of democracies). Our finding on presidential regimes is in line with Kohlscheen (2007), but not fully robust to specification changes. In particular, we find the presidentialism dummy to turn insignificant once we include a dummy for Latin America (see Table A6 in the Appendix). Regarding government polarization, we find no significant effects. Contrary to expectation, left governments do not to behave more coercively than right or center governments. The dummy has a negative sign and is clearly insignificant. However, we find clear-cut evidence that democracies act more aggressively towards their creditors during crisis periods. We also find executive constraints to be positively correlated with the degree of coerciveness. Both of these results are robust to specification changes, the inclusion of year fixed effects or when adding dummies for world regions. One interpretation is that democratic institutions and executive constraints do not restrain governments to act confrontationally vis-à-vis foreign creditors. On the contrary, it appears that democratically elected politicians respond with more aggressive policies towards foreign financial market participants, once a crisis breaks out (see also the discussion in Tomz 2002).

Future research should devote more attention to the mechanisms at work. Are there interaction effects between economic variables (the severity of the crisis) and political or institutional factors? *Why* do democracies behave significantly more aggressively than authoritarian regimes? And what role do elections, socioeconomic pressure and political instability play in crisis countries, be they democracies or autocracies? A thorough analysis of these questions could yield important new insights on the political economy of financial crises and crisis resolution.

7. Conclusion

This article provides the first comprehensive and systematic account of government behavior during debt crises that goes beyond a binary measure of default versus non-default. We assess *how* sovereigns resolve debt crises and which coercive actions they impose on their private international creditors during debt renegotiations. Overall, we find a strong variability in crisis resolution patterns across space and time. The sub-indicators are general enough to

accommodate changes in restructuring mechanisms, instruments, actors and third party policies such as those of the IMF. They may also be suitable to systematize historical debt crises of the 19th and early 20th century and to evaluate future instances of sovereign default.

A number of key insights emerge from the data: First, on average, governments behaved somewhat more cooperatively during the 1980s debt crises than during the Brady and Post-Brady era. The volatility of the index has increased since 1998, with the Argentinean bond restructuring of 2001-2005 as a notable outlier of particularly coercive behavior. Second, there seem to be serial patterns of coerciveness. Countries with governments that adapted a conflictive stance in debt crises of the 1980s also tended to show unilateral government behavior in the 1990s and in more recent restructuring cases. Third, there are important differences regarding the type of debt restructured. On average, recent negotiations to restructure bank debt and domestic bonds were of more conflictive nature than foreign bond restructuring processes. In a last step, we also conduct a first analysis on the determinants of government coerciveness. We find most economic and financial variables to matter little, while political and institutional variables play a significant role. These results motivate future research on the political economy of debt crises and crisis resolution.

More generally, the dataset may be used to tackle a whole set of unanswered research questions, even beyond the arena of sovereign debt. Why are financial distress situations resolved in so different ways? What determines debtor-creditor relations in times of crises? And which political and economic factors drive government policies and rhetoric towards financial market participants? Furthermore, there may be negative consequences of unilateral debtor policies, which have neither been analyzed nor understood. An analysis of the reputational costs of aggressive debt policies could provide new insights to the academic literature and debate. Lastly, policymakers and practitioners may use the index and data as a benchmark to assess future instances of default and debt renegotiations.

APPENDIX

Table A1: Countries and Periods Covered (Year-by-Year Dataset)

Albania	1991-1995	**Nigeria**	1982-1991
Algeria	1991-1996	**Panama**	1983-1996
Argentina	1982-1993	**Pakistan**	1998-1999
	2001-2005	**Peru**	1983-1997
Belize	2006-2007	**Philippines**	1983-1992
Bolivia	1980-1993	**Poland**	1981-1994
Brazil	1983-1994	**Romania**	1981-1983
Bulgaria	1990-1994		1986
Chile	1983-1990	**Russia**	1991-2000
Costa Rica	1981-1990	**South Africa**	1985-1987
Dominica	2003-2005		1989
Dom. Rep.	1982-1994		1993
	2004-2005	**Turkey**	1981-1982
Ecuador	1982-1994	**Ukraine**	1998-2000
	1999-2000	**Uruguay**	1983-1991
Grenada	2004-2005		2003
Jordan	1989-1993	**Yugoslavia**	1983-1988
Mexico	1982-1990	**Venezuela**	1982-1990
Moldova	2002		
Morocco	1983-1990		

Note: Altogether, the year-by-year dataset covers 251 country-year events.

Defaulting Countries NOT included

HIPC countries (no or little debt owed to foreign banks/bondholders):
Cameroon, Congo, Rep. (Brazzaville), Congo, Dem. Rep. (Kinshasa, formerly Zaire), Cote d'Ivoire, Ethiopia, Gambia, Guinea, Guyana, Honduras, Jamaica, Liberia, Madagascar, Malawi, Mauritania, Mozambique, Nicaragua, Niger, Paraguay, Sao Tome and Principe, Senegal, Sierra Leone, Sudan, Togo, Uganda, Togo, Yemen, Zambia

Special cases: (i) Iraq 2005 and (ii) the Yugoslav debt succession agreements (Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro, Slovenia)

Dropped due to insufficient information on negotiation process: Cuba, Gabon, Jamaica, Kenya, Paraguay, Trinidad and Tobago, Vietnam.

Table A2: Restructuring Deals Covered (Agreement-Based Dataset)

	Agreement	Restructuring Type
Albania	1995	Bank Debt Reduction
Algeria	1992	Bank Debt Rescheduling
Algeria	1996	Bank Debt Rescheduling
Argentina	1982	Concerted Lending
Argentina	1983	Concerted Lending
Argentina	1985	Bank Debt Rescheduling
Argentina	1987	Bank Debt Rescheduling
Argentina	1993	Brady Deal
Argentina	2001 (June)	Bond Restructuring ("Megaswap")
Argentina	2001 (Oct.)	Domestic Bond Restructuring
Argentina	2005	Foreign Bond Restructuring (Global)
Belize	2007	Foreign Bond Restructuring
Bolivia	1988	Bank Debt Reduction
Bolivia	1993	Bank Debt Reduction
Bosnia	1997	Bank Debt Reduction
Brazil	1983	Bank Debt Rescheduling
Brazil	1984	Bank Debt Rescheduling
Brazil	1986	Bank Debt Rescheduling
Brazil	1988	Bank Debt Rescheduling
Brazil	1992	Restructuring of Interest Arrears
Brazil	1994	Brady Deal
Bulgaria	1994	Brady Deal
Chile	1983	Bank Debt Rescheduling
Chile	1986	Bank Debt Rescheduling
Chile	1987	Bank Debt Rescheduling
Chile	1988	Bank Debt Rescheduling
Chile	1990	Bank Debt Rescheduling
Costa Rica	1983	Bank Debt Rescheduling
Costa Rica	1985	Bank Debt Rescheduling
Costa Rica	1990	Brady Deal
Dominica	2004	Foreign Bond Restructuring
Dominican R	1983	Bank Debt Rescheduling
Dominican R	1986	Bank Debt Rescheduling
Dominican R	1994	Brady Deal
Dominican R	2005 (July)	Foreign Bond Restructuring
Dominican R	2005 (Oct.)	Bank Debt Rescheduling
Ecuador	1983	Bank Debt Rescheduling
Ecuador	1984	Bank Debt Rescheduling
Ecuador	1985	Bank Debt Rescheduling
Ecuador	1994	Brady Deal
Ecuador	2000	Foreign Bond Restructuring
Grenada	2005	Foreign Bond Restructuring
Jordan	1993	Bank Debt Rescheduling
Mexico	1983	Bank Debt Rescheduling
Mexico	1985	Bank Debt Rescheduling
Mexico	1987	Bank Debt Rescheduling
Mexico	1988	Bank Debt Reduction
Mexico	1990	Brady Deal
Moldova	2002	Foreign Bond Restructuring
Moldova	2004	Conversion of Gazprom Notes

	Agreement	Restructuring Type
Morocco	1986	Bank Debt Rescheduling
Morocco	1987	Bank Debt Rescheduling
Morocco	1990	Bank Debt Rescheduling
Nigeria	1983	Restructuring of Letters of Credit
Nigeria	1984	Rescheduling of Bank Debt and Letters of Cre
Nigeria	1987	Bank Debt Rescheduling
Nigeria	1989	Bank Debt Rescheduling
Nigeria	1991	Brady Deal
Pakistan	1999 (July)	Bank Debt Restructuring
Pakistan	1999 (Dec.)	Foreign Bond Restructuring
Panama	1985	Bank Debt Rescheduling
Panama	1994	Foreign Bond Restructuring
Panama	1996	Brady Deal
Peru	1983	Bank Debt Rescheduling
Peru	1997	Brady Deal
Philippines	1986	Bank Debt Rescheduling
Philippines	1987	Bank Debt Rescheduling
Philippines	1990	Brady Deal
Philippines	1992	Bank Debt Rescheduling
Poland	1982 (April)	Bank Debt Rescheduling
Poland	1982 (Nov.)	Bank Debt Rescheduling
Poland	1983	Bank Debt Rescheduling
Poland	1984	Bank Debt Rescheduling
Poland	1986	Bank Debt Rescheduling
Poland	1988	Bank Debt Rescheduling
Poland	1989	Bank Debt Rescheduling
Poland	1994	Brady Deal
Romania	1982	Bank Debt Rescheduling
Romania	1983	Bank Debt Rescheduling
Romania	1986	Bank Debt Rescheduling
Russia	1997	Bank Debt Reduction (Soviet-era debt)
Russia	1999	Domestic Bond Restructuring
Russia	2000	Restructring of PRINs, IANs
South Africa	1986	Bank Debt Rescheduling
South Africa	1987	Bank Debt Rescheduling
South Africa	1989	Bank Debt Rescheduling
South Africa	1993	Bank Debt Rescheduling
Turkey	1982	Bank Debt Rescheduling
Ukraine	1998	Domestic Bond Restructuring
Ukraine	1999	Foreign Bond Restr. (ING, Merrill Lynch loan
Ukraine	2000	Foreign Bond Restr. (Global)
Uruguay	1983	Bank Debt Rescheduling
Uruguay	1986	Bank Debt Rescheduling
Uruguay	1988	Bank Debt Rescheduling
Uruguay	1991	Brady Deal
Uruguay	2003	Foreign Bond Restructuring
Venezuela	1990	Brady Deal
Yugoslavia	1983	Bank Debt Rescheduling
Yugoslavia	1984	Bank Debt Rescheduling
Yugoslavia	1985	Bank Debt Rescheduling
Yugoslavia	1988	Bank Debt Rescheduling

Note: All “Bank Debt Reschedulings” are reschedulings with foreign commercial banks.

Table A3: Data and Information Sources for each Sub-Indicator

Sub-Indicator	Sources for Coding
Payments missed	Main Source: Arrears data from the GDF (2007) database. Supplementary information from the financial press, Stamm (1987), policy reports, book sources.
Unilateral payment suspension	Main Source: Financial press. Supplementary information from Stamm (1987), policy reports, book sources.
Suspension of interest payments	Main Source: Data on Interest Arrears and Interest Payments from the GDF (2007) database. Supplementary information from the financial press, Stamm (1987), policy reports, book sources.
Freeze on assets (capital and exchange controls)	Main Source: The IMF's "Annual Report on Exchange Arrangements and Exchange Restrictions" (1980-2006). Supplementary information from the financial press, Stamm (1987), policy reports, book sources.
Breakdown or refusal of negotiations	Main Source: Financial press. Supplementary information from Stamm (1987), policy reports, book sources.
Explicit moratorium or default declaration	Main Source: Financial press. Supplementary information from Henry (1999), Stamm (1987), policy reports, book sources.
Explicit threats to repudiate on debt	Main Source: Financial press. Supplementary information from Henry (1999), Stamm (1987), policy reports, book sources.
Data disclosure problems	Main Source: Financial press. Supplementary information from Stamm (1987), policy reports, book sources.
Forced and non-negotiated restructuring	Main Source: Financial press. Supplementary information from Stamm (1987), policy reports, book sources.

Financial Press: Standardized search method in the *factiva* database. Evaluation of 20,000 pages of articles from the Financial Times, Reuters, the Wall Street Journal, Dow Jones News Service, the New York Times and Associated Press.
Policy Reports: ECB (2005), IMF (2001, 2003, 2006), Kincaid et al. (1985), Laursen and Fernandez-Ansola (1995), Piñón-Farah (1996) and Williams et al. (1983).
Book Sources: Aggarwal (1996), Andritzky (2006), Boughton (2001), Cline (1995), Roubini and Setser (2003), Rieffel (2003), Sturzenegger and Zettelmeyer (2006).

Table A4: Correlation Matrix for the 9 Sub-Indicators

	Payments Missed	Unilateral Suspension	Full Suspension	Freeze on Assets	Negotiation Breakdown	Explicit Declaration	Threats to Repudiate	Data Disputes	Forced Restruct.
Payments Missed	1.00								
Unilateral Suspension	0.66	1.00							
Full Suspension	0.33	0.47	1.00						
Freeze on Assets	0.10	0.09	0.08	1.00					
Negotiation Breakdown	0.31	0.48	0.42	0.14	1.00				
Explicit Declaration	0.18	0.27	0.31	0.27	0.28	1.00			
Threats to Repudiate	0.05	0.05	0.13	0.19	0.12	0.24	1.00		
Data Disputes	0.13	0.22	-0.04	0.09	0.13	0.16	-0.05	1.00	
Forced Restruct.	0.10	0.17	0.09	0.14	0.18	0.39	0.17	0.06	1.00

Table A5: Recent Debt Restructuring Cases (from the agreement-based dataset)

(NOT FOR PUBLICATION)

Restructurings of Foreign Currency Bonds		**Restructurings of Domestic Currency Bonds and Bank Debt**	
Country/Year	**Comments**	**Country/Year**	**Comments**
Argentina 2001	Megaswap (June)	Argentina 2001	Restructuring of Domestic Bonds
Argentina 2005	Global Bond Restructuring	Dominican Rep. 2005	Restructuring of foreign bank debt
Belize 2007	Foreign Bond Restructuring	Moldova 2004	Restructuring of Gazprom Notes
Dominica 2004	Foreign Bond Restructuring	Pakistan 1999	Restructuring of foreign bank debt
Dominican Rep. 2005	Foreign Bond Restructuring	Russia 1999	Restructuring of Domestic Bonds
Ecuador 2000	Foreign Bond Restructuring	Ukraine 1998	Restructuring of Domestic Bonds
Grenada 2005	Foreign Bond Restructuring	**Average Index Value**	**4.83**
Moldova 2002	Foreign Bond Restructuring		
Pakistan 1999	Foreign Bond Restructuring		
Russia 2000	Foreign Bond Restructuring		
Uruguay 2003	Foreign Bond Restructuring		
Ukraine 1999	Restructuring of ING and Merrill Lynch bonds		
Ukraine 2000	Global bond restructuring		
Average Index Value	**3.16**		

Table A6: Robustness Checks: Including Year / Region Fixed Effects (NOT FOR PUBLICATION)

	(1)	(2)	(3)	(4)	(5)
	Economic Factors	**Presidential Regime**	**Regime Type**	**Executive Constraints**	**Government Polarisation**
	coef/se	**coef/se**	**coef/se**	**coef/se**	**coef/se**
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Dummy for Latin America	Yes	Yes	Yes	Yes	Yes
Ext. Debt / GNI	0.464**	0.561**	0.513***	0.373*	0.485***
	(0.181)	(0.233)	(0.177)	(0.208)	(0.184)
Short term Debt/ Reserves	0.036*	0.041*	0.045**	0.015	0.031
	(0.021)	(0.025)	(0.020)	(0.018)	(0.021)
Inflation (annual, in %)	0.000***	0.000*	0.000**	0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth (annual, in %)	-0.015	-0.025	-0.014	-0.037**	-0.015
	(0.013)	(0.020)	(0.013)	(0.017)	(0.013)
Banking Crisis	0.050	-0.415	0.084	-0.265	-0.024
	(0.277)	(0.438)	(0.285)	(0.309)	(0.283)
Presidential Regime		0.424			
		(0.281)			
Democracy			0.448***		
			(0.163)		
Executive Constraints				0.146***	
				(0.055)	
Left Government Dummy					-0.251
					(0.181)
/cut1	-0.071	0.478	0.239	-0.230	-0.535
	(0.848)	(0.876)	(0.858)	(1.430)	(1.214)
/cut2	0.400	0.940	0.721	0.177	-0.119
	(0.855)	(0.887)	(0.866)	(1.432)	(1.215)
/cut3	0.872	1.508*	1.207	0.837	0.365
	(0.859)	(0.895)	(0.872)	(1.436)	(1.216)
/cut4	1.330	2.033**	1.673*	1.359	0.832
	(0.860)	(0.901)	(0.873)	(1.433)	(1.215)
/cut5	1.965**	2.766***	2.314***	2.104	1.481
	(0.867)	(0.913)	(0.880)	(1.434)	(1.217)
/cut6	2.461***	3.240***	2.813***	2.657*	1.992
	(0.875)	(0.924)	(0.889)	(1.437)	(1.217)
/cut7	2.800***	3.564***	3.153***	3.048**	2.343**
	(0.854)	(0.898)	(0.865)	(1.406)	(1.193)
/cut8	3.337***	4.071***	3.698***	3.563**	2.896**
	(0.892)	(0.944)	(0.900)	(1.442)	(1.228)
Pseudo R2	0.038	0.076	0.046	0.083	0.041
Number of observations	213	134	213	152	209

Results ordered probit estimation. The dependent variable is the index of government coerciveness on a scale of 1 (very low) to 10 (very high). ***/**/* denote significance at a 1/5/10 per cent level respectively. Standard errors in parentheses. The specification of column (2) is estimated in a subsample of democracies.

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