Sovereign Debt: A Data Survey

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Motivation

Sovereign debt and default is an eternal topic. Much research progress in the past 30 years

Literature is still dominated by theory

- Many good ideas/ mechanisms have not been brought to the data rigorously
- Much missed potential; time for an "empirical revolution"
- The good news: plenty of new (micro) data available & data easier to access

This is a broad survey of the world of sovereign debt data (including "hidden jewels"), based on 15 years of research experience in the field

Main aim here: facilitate new high-quality empirical work, theory testing

Just out: New JEL survey by Mitchener and Trebesch

Sovereign Debt in the Twenty-first Century

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Article Information

Abstract

How will sovereign debt markets evolve in the twenty-first century? We survey how the literature has responded to the eurozone debt crisis, placing "lessons learned" in historical perspective. The crisis featured: (i) the return of debt problems to advanced economies, (ii) a bank-sovereign "doom loop" and the propagation of sovereign risk to households and firms, (iii) rollover problems and self-fulfilling crisis dynamics, (iv) severe debt distress without outright sovereign defaults, (v) large-scale sovereign bailouts from abroad, and (vi) creditor threats to litigate and hold out in a debt restructuring. Many of these characteristics were already present in historical debt crises and are

What I will cover

The world of sovereign debt data:

1. Country level data: Debt levels (*the classic*) and debt composition (*rich new data*)
2. Instrument level data: bonds and loans, prices (*this is the frontier*)
3. Who holds sovereign debt?
4. Sovereign defaults and restructurings

Note: Nice previous survey by Abbas/Rogoff 2019: "Guide to Sovereign Debt Data"

Part 1: Country data on debt stocks (levels and composition)

Country level data: Debt-to-GDP ratios

Debt levels (public debt as % of GDP)

- Much progress on debt stock data, with some remaining gaps (composition)
- Beware of definitions, e.g. difference between "central" and "general" government debt. Helpful and detailed IMF/World Bank guide on debt statistics & concepts here.

- **Standard datasets on Debt-to-GDP ratios:** World Bank IDS, OECD, Eurostat (surprisingly hard to download data for full sample of advanced & emerging economies)

- **Ready-to-use datasets (incl. historical data):**
  - Reinhart and Rogoff (60+ countries) since 1800, here
  - Jorda, Schularick, Taylor (20 advanced countries since 1870), here
  - IMF Global Debt Database (worldwide, partly back to 1950), here
  - IMF Historical Public Debt Database (starts in 1800), here
  - IMF Public Finance in Modern History Database, here

Country level data: Debt composition

Main datatsets with compositional break-downs:

- BIS Debt Security Statistics here (great for benchmarking when using micro data)
- External: Quarterly External Debt Statistics, World Bank IDS
- OECD, e.g. Sovereign Borrowing Outlook (maturity data used e.g. in Bai et al. 2019)

Domestic vs. Foreign:

- Reinhart/Rogoff (starts in 1900) here
- Abbas et al (IMF) 1900-2011, 13 countries here

Short vs. Long:

- Abbas et al (IMF) 1900-2011, 13 countries here
- De Graeve/Mazzolini 2023 20 countries since 1995, daily debt valuation by maturity

Private vs. Official (government-to-government, multilateral):

- Alfaro et al. 2014 Sovereign to Sovereign Capital Flows 1970-2015 data here
- Horn et al. 2020 200 Years of Official International Lending (public data to come)

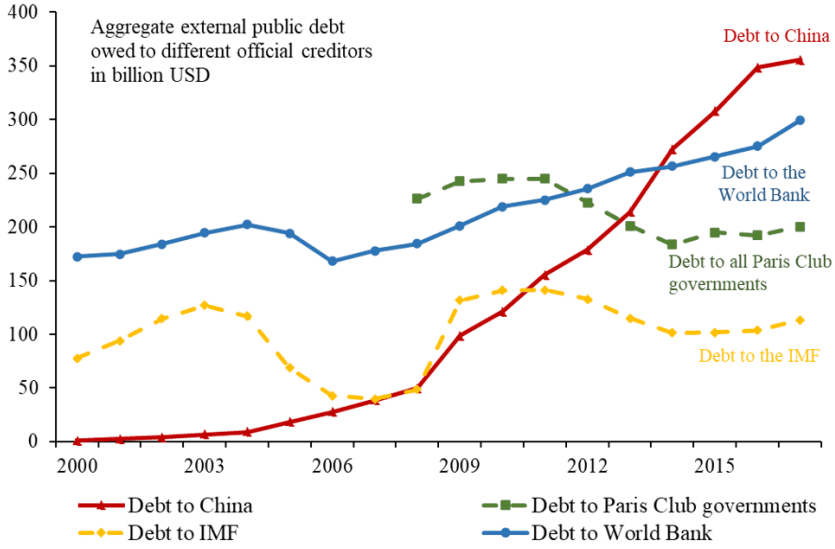
Country level data: Debt owed to China

Overseas lending by China opaque, systematically underreported ("hidden debt")

- Horn et al. 2021 compile a "consensus" dataset of 5000 loans & grants by Chinese state creditors 1950-2017 ($520 bn total). Then use micro data to estimate aggregate debt stocks owed to China, by country, 2000-2017
- Full micro- & country-level data here (update until 2021 coming soon)
- Result: World Bank IDS missed 50% of Chinese overseas lending, in aggregate
- Related: Deep dive into 100 Chinese loan contracts in Gelpern et al. 2022, dataset

We show: China has become the world's largest official creditor

The rise of China as an official creditor



Country level "hidden jewel": bilateral World Bank IDS data

- The World Bank debt transparency initiative has generated a wealth of new, public data
- Main novelty; the World Bank **IDS now available bilaterally - by counterparty** - select "Counterpart-Area" in the IDS DataBase (300+ creditors)
- This means that you can download the composition of Argentina's or Egypt's external government debt by lending country (US vs. UK vs. Russia), for multilaterals even at the level of individual lenders (e.g. Arab Monetary Fund, African Development Bank)
- Not just bilateral debt stocks, but also bilateral flows (commitments, disbursements, principal repayments), bilateral terms (grace, interest, maturity) and bilateral defaults/arrears (principal and interest)
- More than a snapshot. Data goes back to 1970 (annual)
- This opens **many new research opportunities**, e.g. by estimating gravity models or by exploiting (exogenous?) variation in creditor composition / types of lending

Part 2: Instrument level data (prices and quantities)

Instrument level data – the frontier

Our field uses (too) little micro data. Some pogress in recent years, but hopefully this was just the beginning. Much research potential left on big issues such as:

- Maturity structure of sovereign debt
  - Most theories remain untested (EM work by Arellano/Ramanarayanan, Broner et al.)
- Currency composition of debt (foreign vs domestic)
  - Perez/Ottonello 2019, Du/Schreger 2016 $\Rightarrow$ much more to do on EM domestic debt
- Interest rate structure (fixed vs floating, step-up)
  - New theory (e.g. Aguiar et al. 2021), little empirical analysis
- Rollover crises and debt repayment structure
  - Much theory, little empirics (quantifying rollover risks/crises? role of debt management?)
- Debtor-creditor (bank-firm-sovereign) linkages
  - Pioneering work by e.g. Morelli et al 2022, Arellano et al 2017, Gennaioli et al. 2014
- Returns on sovereign debt (fate of bonds in default?)
  - Off-the-shelf return series ignore defaults, Meyer et al. 2022 correct for this bias

Instrument level data: Primary market (bond issuance)

Sovereign bonds: In Stoppok/Trebesch 2021 we compared sovereign bond issuance data by commercial providers. Take aways:

- No database should be used without substantial cleaning
- *Dealogic:* high quality, but somewhat incomplete coverage
- *Bloomberg:* expensive, rather complete, but messy (duplicates, "ghost bonds") and with strict download limitations
- *Refinitiv-Eikon:* reasonably priced, solid coverage of countries and variables, easy to learn $\Rightarrow$ recommended as best standard ressource

Maggiori, Neiman, Schreger et al. use *Morningstar* data in a cool way:

- Extract millions of corporate and sovereign bonds & stocks from (non-public) Morningstar fund holdings data & combine with commercial datasets, namely SDC Platinum, S&P Capital IQ, Dealogic, Orbis, Factset
- All codes made available on www.globalcapitalallocation.com

How to build a global census of bonds

It is now possible to construct a rather complete **census of sovereign (and corporate) bonds worldwide**. To do so, you can use two "hidden jewels":

1. CUSIP Global Services: You can purchase basic data on 25+ million CUSIPs/ISINs of stocks and bonds outstanding. This is a terrific source in the agenda of Maggiori/Neiman/Schreger et al. (details here)

2. ECB collateral framework data ⇒ list of bonds eligible as collateral by the Eurosystem
   - ECB asset collateral lists here. Currently 29.000 bonds in one compact database
   - Daily data back to 2010 (data quality improves over time). Covers issuer, ISIN, issuance date, maturity, coupon, guarantors.

Instrument level: bank loans & Chinese loans

Sovereign loans by banks and bank syndicates

- Commercial datasets have incomplete coverage (crucial to know limitations)
- Sources: A good option is Dealogic Loan Analytics (syndicated loans, e.g. Hale/Obstfeld 2016); SDC Platinum less complete; DealScan Refinitiv promising
- The best loan-level data is country-specific, available from selected central banks/regulators, but not public, i.e. hard to access

Bank lending from China:

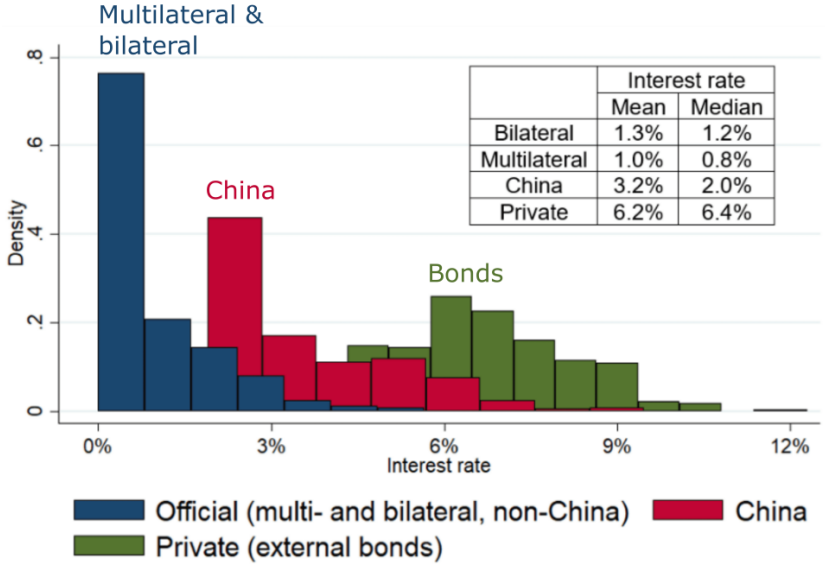
AidData by Brad Parks et al. is finalizing a substantially improved Chinese loan database, covering overseas loans by state and private banks, 2000-2021 (release Q4 2023):

- Now by far the most complete loan-level source on Chinese overseas lending (broader than SAIS-CARI or BU teams; will be used to update our Horn et al. 2021 dataset)
- Also covers intransparent flows (via tax haven, SPVs), which are growing fast

Instrument level: Africa Debt Database by Mihalyi/Trebesch (NEW!)

- We collected micro data on 7000 loans and bonds to African governments 2000-2020. Crucial part was to make use of very messy OECD Creditor Reporting System
- Full dataset can be downloaded as an Excel sheet from the Kiel Institute here
- Main take away: It is possible to make opaque public debt data "public" (easier than you think). Others are now building similair database for Latin America

Interest rates on African sov. debt 2000-20. Large differences across creditors



	Interest rate	
	Mean	Median
Bilateral	1.3%	1.2%
Multilateral	1.0%	0.8%
China	3.2%	2.0%
Private	6.2%	6.4%

Source: Mihalyi and Trebesch (2023) Who Lends to Africa and How?

Instrument level: bond prices – modern data

Secondary market (bond price data):

- *Bloomberg:* very good coverage, combines quote data by 10 or more dealers. Beware which price source you choose: default source BGN not necessarily the best (often imputed prices). I used CBBT on Greek bond prices 2010-12, data much more credible
- *Refinitiv-Eikon/Datastream:* good coverage, easier/cheaper to access
- *JP Morgan morganmarkets:* excellent bond-level source for EM and advanced economies. Limitations: (i) only available at financial institutions/IMF/ECB, (ii) only data on bonds currently in the index are easy to get, (iii) bonds in default drop out. EMBIG since 1992 reconstructed bond-by-bond (incl. defaults) in Meyer et al. 2022
- *CRSP* is great for US Treasuries (data 1925-today). Free data since 2001 here
- *Tick by tick (intraday) data:* e.g. by *Refinitiv-Eikon* or by *MTS* (largest trading platform for sov. bonds, great for Eurozone). Coming: *TRACE* data on sov. bonds
- *Auction data:* country-specific, rarely public e.g. Mexico in Cole et al. 2022

Instrument level: historical bond data

Much to learn from history: major crises are rare, fascinating parallels to today

- **Emerging markets:** Meyer et al. 2022 collect and combine >250.000 monthly sovereign bond prices 1815-2016. The pre-1990 data is fully available here
- **United Kingdom:** Ellison/Scott 2020 collect prices and characteristics of all UK gilts 1694-2018. Data available here
- **United States:** Hall et al. 2021 assemble prices, quantities, descriptions of all securities issued by US Treasury 1776-1960. Data available here
- **Interwar years:** End et al. 2019 compile issuance data on 3800 debt instruments 1913-46 for 18 countries. Data available here
- **Outlook:** Graciela Kaminsky has rich issuance data for LatAm. Indarte/Xu are collecting new, long-run sov. bond data. Josefin Meyer and I are finalizing a 200-year micro database on global capital flows & prices (corporate, sovereign, stocks, bonds).
- **Great historical survey** on international macro finance data sources by Chenzi Xu

Part 3: Who holds sovereign debt?

Who holds sovereign debt? – aggregate data

Growing knowledge on who holds sovereign debt. Type of asset holders increasingly important in international macro (e.g. Maggiori 2022; Broner et al. 2021)

Classic, country-level source: Arslanalp/Tsuda (IMF database)

- Yearly since 1990 (100 countries), quartely since 2004 (48 countries)
- Holdings data for banks, non-banks, official, CB (foreign/local)
  - For emerging markets - paper and data here
  - For advanced economies - paper and data here

Further aggregate datasets: Fang et al. 2022 cover 90 countries since 1991 (data not yet online). Also ongoing: Arslanalp/Sunder-Plassmann 2022 for 180 countries, 1989-2020.

Who holds sovereign debt? – micro data

Also the availability of **micro data on holders of sovereign debt** has greatly increased
$\Rightarrow$ much research potential

- *Bloomberg* and *Refinitiv Eikon* allow to identify major holders of each bond. Hurdle: has to be extracted by hand or by scraping. Example: Morelli et al 2022 use Bloomberg to identify bond holdings by >80 global banks in 2008 (for hundreds of bonds)
- Related (US focused, no hand-coding needed): Factset, Eikon eMAXX Bondholders
- *Bankscope* has long-run data on sovereign debt holdings by bank (not broken down by country/bond), this source was used by Gennaioli et al. 2018
- Maggiori/Schreger et al. (see above) study holdings with mutual fund data by *Morningstar* and now also using the *ECB Securities Holdings Statistics*, (Eurozone paper here, data not public)

Part 4: Sovereign defaults and restructurings

Sovereign default databases

What is a sovereign default? Less clear than you think (definitions: Gelpern et al. 2019)

Classic, binary measures of sovereign default (yearly):

- **Reinhart/Rogoff 2009**: best source on external/domestic defaults since 1800 (data here), comprehensive update coming soon (Farah Yacoub et al.)
- Further data sources on external default (modern and historical):
  - Annual reports by S&P and Moody's (gated)/ Salomon Brothers/ Suter's 1992 book
  - Helpful comparison of various yearly default measures 1950-2011 by Kuvshinov/Zimmermann 2019 (you can easily download their replication data)

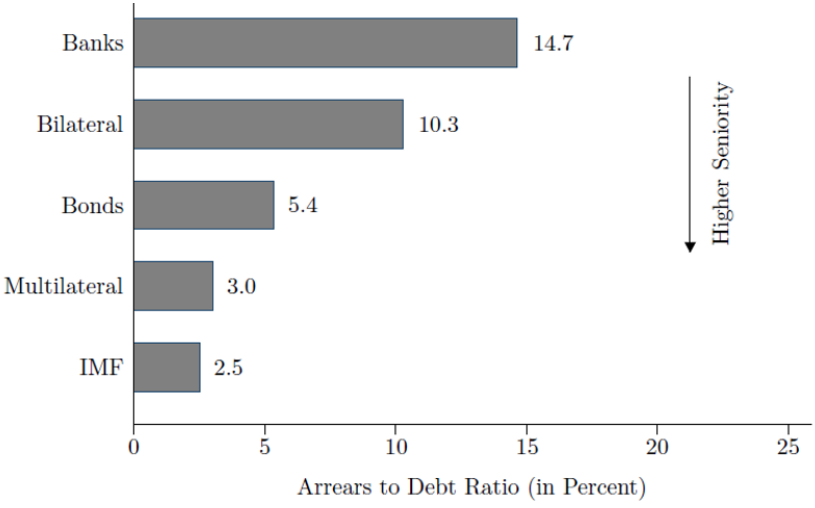
Monthly sovereign default dataset on foreign banks/bondholders by Asonuma/Trebesch 2016. Data 1970-2019 here, soon updated until 2022

Share/amounts of debt in default $\Rightarrow$ defaults are selective & partial

- Arrears data in World Bank IDS very helpful. Bilateral arrears used in Schlegl et al. 2019, aggregate arrears used in Arellano et al. 2023
- Amounts in default also focus of Bank of Canada default dataset (Beers et al. 2022)

Measuring seniority (using arrears data)

Schlegl et al. 2019 study the pecking order of sovereign debt repayments: bondholders and multilaterals (IMF/WB) are more likely to be repaid (lower arrears, defaults happen later)



Sovereign debt restructurings

Restructuring events (dates, duration, basic characteristics):

- External banks & bondholders: Asonuma/Trebesch 2016. Data here
- Domestic debt restructurings: Erce et al. 2022, IMF
- Restructurings involving Chinese state creditors: Horn et al. 2022. Data here
- Paris Club debt restructurings: Schlegl et al. 2019, Cheng et al. 2016
- Combining all external restructurings (private, China, Paris Club): >1000 restructuring events in Horn et al. 2022. Full database here

Preemptive vs post-default?

- 30-50% of restructurings are preemptive - without missing payments
- Asonuma/Trebesch 2016 classify deals as preemptive/post-default. Data here

Creditor litigation?

- Strong increase in defaults/restructurings involving creditor litigation
- Schumacher et al. 2021 code all sovereign debt lawsuits filed in London and New York 1970-2010. Data available here

Hard vs. soft defaults (mainly: the size of haircuts)

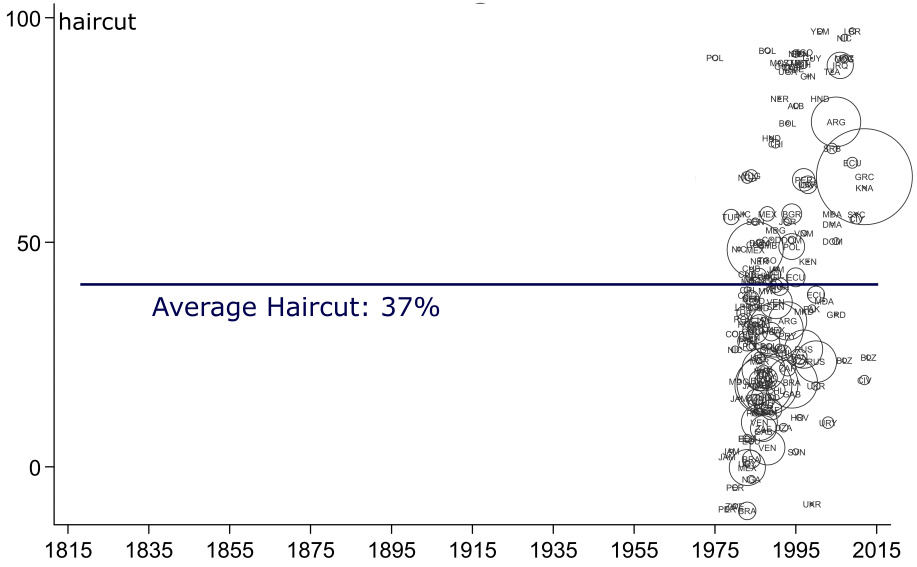
Haircuts: how much do investors lose?

- Sturzenegger and Zettelmeyer 2008 developed the method to estimate NPV haircuts
- Cruces/Trebesch 2013 compute haircuts in 180 debt restructurings with foreign banks & bondholders 1970-2014 (updated soon). Data here
- Asonuma et al. 2023 compute haircuts by instrument 1998-2020 (bond-by-bond, domestic & external defaults, dataset here. Bond-level haircuts also in Fang et al. 2021
- Meyer et al. 2022 compute haircuts on external bonds since 1815. Historical haircut dataset 1820-2014 available here
- Outlook: several ongoing projects on haircuts in domestic debt restructurings; Schlegl et al. for haircuts on Paris Club; Horn et al. on haircuts vis-a-vis China (coming soon)

Coerciveness indicators (cooperative government approach?)

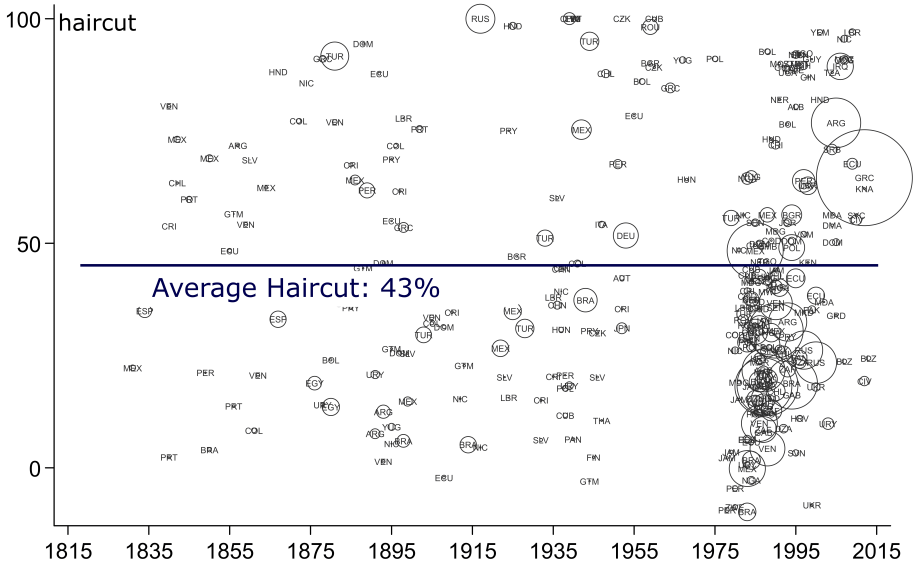
- Enderlein et al. 2012 propose 9 criteria to measure government actions and rethoric vis-à-vis external creditors, e.g. "threats to fully repudiate", "refusal to negotiate?"
- Dataset coded for defaults 1980-2009 (updated by Trebesch/Zabel 2016 & Gatien Bon)

Haircuts 1970-2014 (Cruces/Trebesch 2013)



Circle size = debt volume (real 2009 US$)

Haircuts 1820-2014 (Meyer et al. 2022)



Circle size = debt volume (real 2009 US$)

NEWS: Launch of our "Sovereign Debt Restructuring Database"

Announcing the Asonuma/Trebesch (2023) Sovereign Debt Restructuring Database

- Combines all of our restructuring data in one dataset. Release late summer/fall 2023.

Coverage:

- External private restructurings - with foreign banks/bondholders
- 204 debt exchanges, 1970-2022, plus ongoing defaults/negotiations

Variables:

- Start and end of negotiations/default, principal agreement
- Characteristics/terms, e.g. amounts, nr and type of old and new instruments, buy-backs
- Haircuts (from Cruces/Trebesch 2013 & Asonuma et al. 2023)
- Preemptive vs. post-default (Asonuma/Trebesch 2016, updated)
- Debtor coerciveness (Enderlein et al. 2012, updated)
- Litigation & holdouts (Schumacher et al. 2021, Fang et al. 2021)
- Creditor details (nr of banks, creditor committees, Asonuma/Joo 2020, Trebesch 2011)
- Much additional context information: deal/process narratives, sources, data quality

Overview of variables - Sovereign Debt Restructuring Database

Overview of variables in 'Main Database' *

Variable Category	Variable(s)
Deal identifiers	Deal IDs, Country and County Code, Restructuring Type
Context	Summary of Restructuring Terms and Context / Trigger of the crisis
Timing variables	Start, default and announcement (and dummy no exact start date)
	Start date of negotiations
	Principal agreement or bond exchange offer date
	End of restructuring: completion of exchange
	Alternative end date / follow-up restructurings
	Strictly preemptive / Weakly preemptive / Post default
Restructruing Characteristics	Debt Restructured (m US$)
	7 dummies: Bond Exchange, Buy Back Deal, Brady Deal, Donor Funded, All Fallen Due, Deal affects PRD, Deal includes short-term debt
Restructuring Terms	Number of old and new instruments
	Single or different treatment? (depending on old instrument)
	Exchange Menu? (multiple options for creditors?)
	Interest rates of old and new debt
	Maturity remaining of old debt and maturity of new debt
	Principal Payments ("Bullet" or "Amortizing")
	Grace period of new debt
	Sweeteners / Downpayments (mUSD)
	Buyback (mUSD)
	Deal includes new money (new loan)
	If yes, how much new money? (m USD?)

Variable Category	Variable(s)
Haircuts	Preferred Haircut H_{tiz}
	Underlying Discount Rate (Exit Yield)
	Market Haircut H_M
	Face Value Reduction (in %)
	Price-based Haircut H_P
	Source of haircut data (CT or ANR)
Coerciveness Indicators	Coerciveness Index Total
	9 indicators: Payment Missed?, Full Suspension? Unil. Suspension?, Moratorium?, Freeze on External Assets?, Forced?, Explicit Threat?, Data Disclosure Problems?, Breakdown or Delay?
	Source / Reason why not coded
Chreditor Characteristics	Number of creditors (banks/bondholders)
	Creditor Committee (yes/no) and Size of Committee
	Committee Chair (Institution and Nationality)
	Vice Chair(s) (Institutions and Nationalities)
	Members of Creditor Committee
Creditor Litigation	Litigation (yes/no)?
	Number
	Attachment attempt (yes/no?)
	Amount of debt under litigation (face value in m USD)
	Share of debt affected by litigation?
Participation in Bond Restructurings	Number of new bonds and number of old bonds
	Nr. Old Bonds with CACs and Share including CACs
	Initial/Pre-CACs Houldout Rate
	CACs used?
	Final/Post-CACs Holdout rate

*For further definitions and explanaitions please see the accompanying Codebook.

An additional sheet includes press narratives and other sources for most variables in the Main Database, data quality sub-indicators and further context (Press summary, Important Political Events, IMF Prorgamm, Additional Backgorund Info and Comments)

Extract 1 - Sovereign Debt Restructuring Database

Deal identifiers					Restructuring Characteristics (Cite Cruces and Trebesch 2013 and Asonuma, Niepelt, Ranciere 2023))								Restructuring Terms				Haircuts (cite Cruces/Trebesch 2013 (CT) / Ranciere 2023 (R			
Deal IDs as in Asonumaa and Trebesch	Country	Country Code	Restructuring type	End date	Debt restructured (m US$)	Bond Exchange	Buy Back Deal	Brady Deal	Donor Funded	All Fallen Due	Deal affects past restructured debt	Deal includes short-term debt	Sweeteners / Downpayments (mUSD)	Buyback (mUSD)	Deal includes new money (new loan)	If yes, how much new money? (m USD?)	Preferred Haircut H_{SZ}	Underlying Discount Rate (Exit Yield)	Market Haircut H_{PV}	Face Value Reduction (in
1	Albania	ALB	Bank Debt Restructuring	08 / 1995	501	0	partial	0	1	1	0	0	0,00	96,46	0	0	80,40%	15,90%	80,40%	54,8
2	Algeria	DZA	Bank Debt Restructuring	03 / 1992	1.457	0	0	0	0	0	0	0	0	0	0	0	8,70%	12,20%	13,30%	0,0
3	Algeria	DZA	Bank Debt Restructuring	07 / 1996	3.200	0	0	0	0	1	0	0	0	0	0	0	23,50%	12,6%	25,0%	0,0
4	Angola	AGO	Loan Restructuring (Trafigura loa	06 / 2020	n.a.	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a	n.a	n.a	n.
5	Antigua and B	ATG	Loan Restructuring (SFGL loan)	03 / 2012	25	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	100,0	10,0	100,0	10
6	Antigua and B	ATG	Loan Restructuring (Andrade Gut	12 / 2012	22	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11,6	10,0	11,6	0,
7	Argentina	ARG	Bank Debt Restructuring	08 / 1985	9.300	0	0	0	0	1	0	1	0	0	1	3700	30,30%	19,5%	30,3%	0,0
8	Argentina	ARG	Bank Debt Restructuring	08 / 1987	29.515	0	0	0	0	1	0	1	0	0	1	1550	21,70%	14,7%	21,7%	0,0
9	Argentina	ARG	Bank Debt Restructuring (Brady D	04 / 1993	28.476	0	0	1	0	0	1	0	700	0	0	0	32,5%	11,2%	41,8%	9,5
10	Argentina	ARG	Bond Debt Restructuring (Global)	06 / 2005	60.572	1	0	0	0	0	1	0	0	0	0	0	76,8%	10,4%	78,8%	29,
11	Argentina	ARG	Bond Debt Restructuring	09 / 2020	65.500	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	36,2	11,5	51,6	0,
12	Barbados	BRB	Bond Debt Restructuring	12 / 2019	3.866	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24,3	7,6	26,5	10
13	Belize	BLZ	Bond Debt Restructuring	02 / 2007	516	1	0	0	0	0	0	0	0	0	0	0	23,7%	9,6%	23,7%	0,0
14	Belize	BLZ	Bond Debt Restructuring	03 / 2013	586	1	0	0	0	0	1	0	0	0	0	0	31,5%	8,1%	24,4%	10,9
15	Belize	BLZ	Bond Debt Restructuring	03 / 2017	530	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	19,7	9,1	29,9	0,
16	Belize	BLZ	Bond Debt Restructuring	11 / 2021	n.a.	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a	n.a	n.a	n.
17	Bolivia	BOL	Bank Debt Restructuring	03 / 1988	473	0	partial	0	0	1	0	0	0	28	0	0	32,7%	one (buy bac	32,7%	86,
18	Bolivia	BOL	Bank Debt Restructuring	04 / 1993	171	0	partial	0	1	1	0	0	0	12	0	0	76,5%	14,1%	76,5%	67,
19	Bosnia and He	BIH	Bank Debt Restructuring	12 / 1997	1.300	0	0	0	0	0	1	0	0	0	0	0	89,6%	13,1%	90,5%	69,
20	Brazil	BRA	Bank Debt Restructuring	02 / 1983	4.452	0	0	0	0	1	0	0	0	0	1	4400	-9,8%	9,3%	-9,8%	0,0
21	Brazil	BRA	Bank Debt Restructuring	01 / 1984	4.846	0	0	0	0	1	0	0	0	0	1	6500	1,7%	14,1%	3,5%	0,0
22	Brazil	BRA	Bank Debt Restructuring	09 / 1986	6.671	0	0	0	0	1	0	0	0	0	0	0	19,2%	12,8%	19,2%	0,0
23	Brazil	BRA	Bank Debt Restructuring	11 / 1988	62.100	0	0	0	0	0	0	0	0	0	1	5200	18,4%	14,2%	22,8%	0,0
24	Brazil	BRA	Bank Debt Restructuring (Restruc	11 / 1992	9.167	0	0	0	0	1	0	0	867	0	0	0	27,0%	13,3%	27,0%	0,0
25	Brazil	BRA	Bank Debt Restructuring (Brady D	04 / 1994	43.257	0	0	1	0	0	1	0	0	0	0	0	29,3%	11,8%	38,3%	9,1
26	Bulgaria	BGR	Bank Debt Restructuring (Brady D	06 / 1994	7.310	0	partial	1	0	1	0	0	110	201	0	0	56,3%	12,3%	56,3%	31,
27	Cameroon	CMR	Bank Debt Restructuring (Buubac	08 / 2003	796	0	1	0	1	1	0	0	0	115	0	0	85,5%	one (buy bac	85,5%	85,
28	Chad	TCD	Loan Restructuring (Glencore loa	12 / 2015	1.400	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10,8	7,1	-1,3	0,
29	Chad	TCD	Loan Restructuring (Glencore loa	06 / 2018	1.667	0	n.a.	n.a.	n.a.	n.a.	1	n.a.	n.a.	n.a.	n.a.	n.a.	27,3	8,6	28,6	0,
30	Chad	TCD	Loan Restructuring (Glencore loa	11 / 2022	n.a.	0	n.a.	n.a.	n.a.	n.a.	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a	n.a	n.a	n.
31	Chile	CHL	Bank Debt Restructuring	11 / 1983	2.169	0	0	0	0	0	1	0	0	0	1	1300	0,7%	13,7%	0,8%	0,0
32	Chile	CHL	Bank Debt Restructuring	01 / 1984	1.160	0	0	0	0	1	0	0,5	0	0	0	0	8,4%	15,6%	8,4%	0,0
33	Chile	CHL	Bank Debt Restructuring	04 / 1986	6.007	0	0	0	0	0	1	0	0	0	1	1085	31,7%	16,4%	34,6%	0,0
34	Chile	CHL	Bank Debt Restructuring	06 / 1987	5.901	0	0	0	0	0	1	0	0	0	0	0	14,3%	14,3%	21,2%	0,0
35	Chile	CHL	Bank Debt Restructuring	12 / 1990	6.494	0	0	0	0	0	1	0	0	0	1	320	17,0%	15,3%	31,6%	0,0
36	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	04 / 1980	402	0	0	0	0	1	0	0	0	0	0	0	29,6%	27,5%	29,6%	0,0
37	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	01 / 1983	58	0	0	0	0	0	0	0	0	0	0	0	38,2%	36,8%	43,0%	0,0
38	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	06 / 1984	64	0	0	0	0	0	0	0	0	0	0	0	30,1%	34,1%	36,8%	0,0
39	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	05 / 1985	61	0	0	0	0	0	0	0	0	0	0	0	37,0%	34,0%	47,7%	0,0
40	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	05 / 1986	65	0	0	0	0	0	0	0	0	0	0	0	35,4%	29,4%	45,2%	0,0
41	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	05 / 1987	61	0	0	0	0	0	0	0	0	0	0	0	26,8%	23,6%	34,6%	0,0
42	Congo, Dem. F	COD / ZAR	Bank Debt Restructuring	06 / 1989	61	0	0	0	0	1	0	0	0	0	0	0	50,6%	28,1%	70,2%	0,0

Extract 2 - Sovereign Debt Restructuring Database

A	B	C	D	K	L	M	N	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
Deal identifiers				**Timing variables (in particular start and end of default / restructuring) (Cite Asonuma and Trebesch 2016)**				**Case coverage across sources (Haircuts and Restructuring data) (main source in bold) (Cite Cruces and Trebesch 2013)**														**Data quality Su (Cite Cruces and**		
Deal IDs as in Asonumaa and Trebesch	Country	Country Code	Year of restructuring	Principal agreement or bond exchange offer date	**Principal agreement or bond exchange offer date**	End of restructuring: completion of exchange / final agreement	**End of restructuring: completion of exchange (NARRATIVE)**	**IMF (y/n)**	Details	**IIF (y/n)**	Details	**World Bank (y/n)**	Details	**Stamm (y/n)**	Details	**SZ (y/n)**	Details	**Financial Press (y/n)**	Details	**Other (y/n)**	Details	All essential info on NEW debt	Details by instrument	Full consistency across sources (On NEW
55	Cuba	CUB	12 / 1983	12 / 1983	Early Dec. 1983 "After more than	12 / 1983	"An agreement rescheduling the	1	IMF (1986:	**1**	IIF (2001)	1	GDF (2002,	0		0		0		0		1	0	1
56	Cuba	CUB	12 / 1984		n. a.	12 / 1984	"Cuba has signed a	1	IMF (1986:	**1**	IIF (2001)	1	GDF (2002,	0		0		0		0		1	0	0
57	Cuba	CUB	09 / 1985	07 / 1985	"Representative s of the creditor	09 / 1985	"Cuba signed an accord	1	IMF (1986:	**1**	IIF (2001)	1	GDF (2002,	0		0		0		0		1	0	0
58	Dominican Rep.	DOM	02 / 1986	05 / 1985	In May 1985 principal	02 / 1986	In Febr. of 1986 final agreement	1	IMF (1989a:	**1**	IIF (2001)	1	GDF (2002,	1	Stamm (1987)	0		0		0		1	0	0
59	Dominican Rep.	DOM	08 / 1994	05 / 1993	In May 1993 "an unexpected deal	08 / 1994	In mid Febr 1994 "Senior	1	IMF (1995b:	**1**	IIF (2001)	1	WDT (1996:	0		0		0		0		1	1	0
60	Dominican Rep. (	DOM	05 / 2005	04 / 2005	On April 20 2005 official offer:	05 / 2005	"The bond exchange,	0		0		0		0		**1**	Sturzene gger and	0		1	Finger and	1	1	1
61	Dominican Rep. (	DOM	10 / 2005	06 / 2005	"The Dominican Republic has	10 / 2005	"In October 2005, the	0		0		0		0		0		**1**	IFR 18 June,	1	Finger and	1	1	0
62	Dominica	DMA	06 / 2004	04 / 2004	April 8, 2004 exchange offer	06 / 2004	June 15, 2004: settlement/bond	0		0		0		0		0		1	Dow Jones, 14	**1**	IMF (2004a):	1	1	1
63	Ecuador	ECU	10 / 1983	01 / 1983	"ECUADOR has reached	10 / 1983	"The finance minister of	**1**	IMF (1983:	1	IIF (2001)	0		0		0		1	Dow Jones, 10	0		1	0	0
64	Ecuador	ECU	08 / 1984	03 / 1984	Principal agreement in	08 / 1984	"Ecuador has signed an	0		**1**	IIF (2001)	0		1	Stamm (1987)	0		0		0		1	0	0
65	Ecuador	ECU	12 / 1985	12 / 1984	Dec 1984 Agreement in	12 / 1985	"Ecuador and a group of 300	**1**	IMF (1986:	1	IIF (2001)	1	GDF (2002,	1	Stamm (1987)	0		0		0		1	0	0
66	Ecuador	ECU	02 / 1995	05 / 1994	On May 3, 1994 "Ecuador and its	02 / 1995	Febr. 1995 "After several anxious	1	IMF (1995a:	**1**	IIF (2001)	1	WDT (1996),	0		0		0		0		1	1	1
67	Ecuador	ECU	08 / 2000	07 / 2000	On July 27, 2000 "Ecuador	08 / 2000	On Aug. 23 2000, the	0		1	IIF (2001)	1	GDF (2003)	0		**1**	Sturzene gger and	0		1	Finger and	1	1	1
68	Ecuador	ECU	06 / 2009	04 / 2009	April 20, 2009 "Ecuador	06 / 2009	June 3, 2009 "Ecuador is very	0		0		0		0		0		1	Moody's (2010),	1	Porzecan ski (2010)	1	1	1
69	Ecuador	ECU	08 / 2020	04 / 2020	April 17 2020 – Ecuador	08 / 2020	The Government of Ecuador Press	n. a.		n. a.		n. a.		n. a.		n. a.		n. a.		n. a.		n. a.	n. a.	n. a.
70	Ethopia	ETH	01 / 1996	?	n. a.	01 / 1996	"The World Bank said on Tuesday	0		**1**	IIF (2001)	1	WDT (1997:83)	0		0		0		1	World Bank	1	0	1
71	Gabon	GAB	12 / 1987	06 / 1987	"Gabon recently reached	12 / 1987	End of restructuring in	**1**	IMF (1990a:	1	IIF (2001)	1	GDF (2002,	0		0		0		0		1	0	0
72	Gabon	GAB	05 / 1994	02 / 1994	"A group of Western banks	05 / 1994	"Gabon agreed with the informal	0		**1**	IIF (2001)	1	WDT (1994: 75)	0		0		0		0		1	0	1
73	Gambia,The	GMB	02 / 1988	05 / 1987	agreement in principle of May	02 / 1988	February 1988 according to	**1**	IMF (1990a:	1	IIF (2001)	1	GDF (2002,	0		0		0		0		1	0	1

Concluding remarks

Data on sovereign debt has greatly improved over the past 15 years.

Some take aways from this survey:

- Great research potential with rich, new micro data (repayment/default motives; debtor-creditor linkages; rollover risks; optimal maturity & debt structure)
- New bilateral creditor-sovereign data offers great opportunities (How do government choose their creditors? Who defaults on whom? Shifts in creditor composition)
- Growing role of official creditors understudied (sovereigns, central banks, state banks, sovereign wealth funds). Much left to do on geopolitics of sovereign lending and default.
- Finally: Do not be afraid of building your own data, the returns can be very high

Thank you!

Feedback is very welcome: christoph.trebesch@ifw-kiel.de

Most of my datasets can be found here:
https://sites.google.com/site/christophtrebesch/data

Twitter (for data updates): @Ch_Trebesch

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