

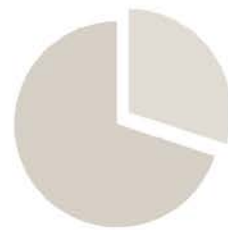


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Database of Sovereign Defaults, 2016

by David Beers and Jamshid Mavalwalla



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Database of Sovereign Defaults, 2016

David Beers¹ and Jamshid Mavalwalla²

¹Advisor, International Directorate
Bank of England
London, United Kingdom EC2R 8AH
David.Beers@bankofengland.co.uk

²Funds Management and Banking Department
Bank of Canada
Ottawa, Ontario, Canada K1A 0G9
jmaivalwalla@bankofcanada.ca

The views expressed in this report are solely those of the authors.
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Abstract

Until recently, there have been few efforts to systematically measure and aggregate the nominal value of the different types of sovereign government debt in default. To help fill this gap, the Bank of Canada's Credit Rating Assessment Group (CRAG) has developed a comprehensive [database](#) of sovereign defaults posted on the Bank of Canada's website. Our database draws on previously published data sets compiled by various public and private sector sources. It combines elements of these, together with new information, to develop estimates of stocks of government obligations in default, including bonds and other marketable securities, bank loans, and official loans in default, valued in US dollars, for the years 1970 to 2015 on both a country-by-country and a global basis. This update of CRAG's database, and subsequent updates, will be useful to researchers analyzing the economic and financial effects of individual sovereign defaults and, importantly, the impact on global financial stability of episodes involving multiple sovereign defaults.

JEL classification: F34, G10, G14, G15

Bank classification: Debt management; Development economics; Financial stability; International financial markets

Résumé

Jusqu'à tout récemment, peu d'efforts étaient consacrés à l'évaluation systématique des différents types de défauts souverains ainsi qu'au calcul de la valeur nominale globale des engagements qu'ils représentent. Afin de remédier à cette lacune, le groupe chargé de la notation du crédit de la Banque du Canada a développé une [base de données](#) exhaustive de défauts souverains, qui se trouve sur le site Internet de la Banque. Cette base repose sur l'exploitation et la compilation de données préalablement publiées par diverses sources, publiques et privées. De plus, elle contient de nouvelles données qui, conjuguées aux autres sources, permettent d'estimer le montant total des prêts bancaires, des obligations et autres titres négociables, de même que des prêts officiels en situation de défaut, tous exprimés en dollars américains, pour la période allant de 1970 à 2015. Cette information est présentée à la fois pays par pays, et de manière agrégée, c'est-à-dire à l'échelle mondiale. La base de données actualisée du Groupe chargé de la notation du crédit, et ses mises à jour ultérieures, sera utile aux chercheurs souhaitant analyser les effets économiques et financiers de la défaillance d'emprunteurs souverains spécifiques, ainsi que – dimension importante – l'incidence sur la stabilité financière mondiale de multiples défauts souverains.

Classification JEL : F34, G10, G14, G15

Classification de la Banque : Gestion de la dette; Économie du développement; Stabilité financière; Marchés financiers internationaux

1. Introduction

Government debt defaults are a recurring feature of public finance. These defaults have typically involved low-income and emerging-market economies, although recent cases include advanced-economy sovereigns. As a result, there is a prolific literature analyzing various aspects of sovereign debt crises—notably the political and economic factors that drive defaults, their domestic economic and financial effects and the global impact of episodes where multiple defaults are involved.

Even so, comprehensive data on sovereign defaults have been hard to come by. This reflects a number of factors. An important reason is that there is no single internationally recognized definition of what constitutes a sovereign default. As a result, standards used by government borrowers and their creditors to report defaults, if they report at all, differ, and information on the various types of defaulted debt must be mined from different sources. The Bank’s Credit Rating Assessment Group (CRAG) database helps fill these gaps through the compilation of a comprehensive country-by-country and global data set of government debt in default that applies a common standard for determining when defaults occur.

This report is organized as follows. We start by proposing a definition of when a sovereign default has occurred. We next describe the main components of the CRAG database. We highlight the sources we used to compile the data and, where applicable, the methods employed to develop estimates. We also score the reliability of default data for each country. We then provide a commentary looking at historical trends in the default data, which can deepen our understanding of the impact on global financial stability of individual and multiple cases of sovereign defaults. A final section offers some conclusions. An appendix provides additional information on the sources used for the country-by-country and aggregate data.

2. Determining Sovereign Defaults

Like other types of debt, sovereign debt—the term commonly used to denote debt issued by national governments and certain fiscally autonomous territories—is a contractual obligation. A failure to meet these contractual obligations to pay interest or principal on the due date on sovereign debt provides one clear-cut example of a default. Another example is a failure by a

government to honour debt it has lawfully guaranteed where there are clear provisions for the guarantor to make timely payment. That said, sovereign defaults are often not so explicit. Government responses to financial distress can take many forms. In some cases, it can be inferred that, even in the absence of an actual interruption of debt service, a default has effectively occurred because actions by the sovereign result in economic losses by creditors. These can vary widely.

Consistent with much of the literature on sovereign defaults (Cruces and Trebesch 2011), and the practice of credit-rating agencies (Beers and Chambers 2006),¹ we consider that a default has occurred when debt service is not paid on the due date (or within a specified grace period), payments are not made within the time frame specified under a guarantee, or, absent an outright payment default, in any of the following circumstances where creditors incur material economic losses on the sovereign debt they hold:

- agreements between governments and creditors that reduce interest rates and/or extend maturities on outstanding debt
- government exchange offers to creditors where existing debt is swapped for new debt on less-economic terms
- government purchases of debt at substantial discounts to par
- government redenomination of foreign currency debt into new local currency obligations on less-economic terms
- swaps of sovereign debt for equity (usually relating to privatization programs) on less-economic terms
- conversion of central bank notes into new currency of less-than-equivalent face value

¹ Sovereign ratings assigned by credit-rating agencies typically assess the likelihood of timely payment of government and central bank bills, notes, bonds and bank loans, not the likelihood of timely payment of loans contracted from the International Monetary Fund, the multilateral lending institutions and other official creditors.

3. Features of the CRAG Sovereign Default Database

CRAG's sovereign database—posted on the Bank's website at <http://www.bankofcanada.ca/wp-content/uploads/2016/06/crag-database-update-23-06-16.xlsx>—tabulates data on debt owed to official and private creditors for all sovereign defaults that we have identified between the years 1970 and 2015.² For each year, the data are compiled on a country-by-country basis by type of creditor and then aggregated to show global totals. All country and global data on debt in default are expressed in nominal US dollars. Sovereigns in default at any point during the year, together with the amounts of debt affected, are shown in the annual totals. Anticipating future updates, the database also shows the date of the most recent revision.

For the May 2016 update, the main changes are: the inclusion of data on defaults between 1970 and 1974; data for four governments not previously included—Czechoslovakia (preceding its breakup into the Czech and Slovak Republics in 1993), Montenegro, Papua New Guinea and Puerto Rico; data on pre-World War II defaulted UK pound sterling- and US dollar-denominated bonds settled between 1975 and 1987; expanded country data on World Bank loans in default for 1985–2015 and aggregated data beginning in 1980; a substantial revision of data on Argentina for 2001–2015, incorporating the claims of holdout bondholders now recognized by the government; and other revisions of country and aggregate default data for 2014 and previous years and, where available, for 2015.

Within the country and global totals, debt in one or more of the following creditor subcategories is included:

- International Monetary Fund (IMF)
- International Bank for Reconstruction and Development (World Bank)
- Paris Club
- other official creditors
- private creditors

² The CRAG database is distinct from and complements the data sets measuring the nominal value of sovereign debt restructuring agreements and creditor losses involving private creditors and Paris Club official creditors published by Cruces and Trebesch (2011) and Das, Papaioannou and Trebesch (2012), respectively.

- foreign currency bank loans
- foreign currency bonds
- local currency debt

In addition to the country-by-country components, in most cases the database contains the following aggregate data for the period starting in 1970 and ending in 2015:

- total debt in default (in nominal US dollars)
- total debt in default by creditor type (in nominal US dollars)
- total debt in default by debtor type (in nominal US dollars)
- number of sovereign governments
- number of sovereign governments in default
- outstanding Paris Club debt (in nominal US dollars)
- global general government or public debt (in nominal US dollars)
- global gross domestic product (in nominal US dollars)

4. Data Sources and Data Estimation

To construct the CRAG database, we utilized data previously published by the Asian Development Bank (2015 and earlier years); the Paris Club (2016); the IMF (2016 and earlier years); the World Bank's Annual Financial Statements (2015 and earlier years); the World Bank's World DataBank (2016); Tweedie, Hagan and Tiwari (2012); Das, Papaioannou and Trebesch (2012); Cruces and Trebesch (2011); Beers and Chambers (2006); and Suter (1992). We combined elements of these data sets, together with information from national governments and other sources, to develop our estimates of stocks of bank loans, bonds and other marketable securities, other private creditor claims, and IMF, World Bank, Paris Club and other official loans in default for the years 1970 through 2015. A country-by-country list of sources for the data is provided in the appendix.

It is important to highlight that some of our country data are, in fact, estimated. As Cruces and Trebesch (2011) and others have noted, documenting which sovereigns have defaulted, the time frame of such defaults and the amounts of debt affected can be challenging. This is particularly

true for local currency defaults, which often are not acknowledged as such by the governments involved and which have been little studied in the literature. Even in the better-documented cases where defaults are resolved through a formal debt-restructuring process, different sources can, at times, provide contradictory information.

Consequently, while we have relied on sources we consider to be reliable, our database of sovereign defaults may not be exhaustive. Some defaults may have been overlooked. Estimates of the US-dollar amounts of debt involved, in particular, may be subject to revision. Additional information on defaults, as it becomes available, will be incorporated in future database updates. Any errors in the identification and estimation processes employed are, of course, the sole responsibility of the authors.

The methods we utilize to estimate values of different types of defaulted debt are outlined below.

IMF lending. This category refers to IMF loans to member governments and obligations to pay IMF membership quotas. The IMF does not report late payments as defaults because it is a preferred creditor—meaning that generally it is paid ahead of other types of creditors and, when payments are late, expects ultimately to be repaid. Even so, there are cases where such arrears have persisted for extended periods. Also, some IMF loans to countries receiving official debt relief have been written off under the Multilateral Debt Relief Initiative (MDRI). Our sources on payment arrears are IMF annual reports, use of IMF credit as reported in the IMF’s *International Financial Statistics*, and reports by the IMF on cases of “protracted arrears.” Utilizing these data and information on loan charges, we compute cumulative interest arrears and charges and apply them to the principal amount of loans and overdue quota amounts reported as being in arrears for at least six months.³ Since IMF lending is denominated in special drawing rights, we use applicable end-of-period exchange rates to convert amounts of estimated defaulted loans into US dollars. Because MDRI-related loan write-offs are funded by donor governments and do not impact the IMF’s balance sheet, they form one component of the other official creditor data category discussed below.

MLI lending. This category refers to loans by multilateral lending institutions (MLIs) to member governments. Many MLIs—all owned or controlled by groups of governments—have

³ An exception that we included, given its size, is Greece’s short-lived US\$2.2 billion arrears to the Fund in 2015.

preferred creditor status, but like the IMF periodically have experienced late payments on their loans. Reporting practices on such loans vary, although the World Bank and the largest regional development banks publish reasonably comprehensive data on arrears of principal and interest when they persist for six months or more. We publish separate World Bank country data on its loans in arrears for the years 1985–2015. In the global totals, we also show the value of loans in arrears for the years 1980–1984, a period when the World Bank did not identify the relevant individual countries. Our source is the World Bank’s annual financial statements.⁴ Apart from the World Bank data just noted, MLI lending, including MDRI-related write-offs, is one component of our proxy for other official debt in default described below.

Paris Club lending. This category refers to loans extended by the Paris Club, an informal group of bilateral official lenders, to other governments. Das, Papaioannou and Trebesch (2012) have published the most comprehensive data on sovereign debt restructurings involving the Paris Club for the years 1956–2010. These and more recent data are also available directly from the Paris Club’s website and show the year and the amounts of each restructuring of Paris Club debt. In some cases, amounts of restructured loans and interest arrears are separately identified. However, the data do not include the annual amount of unpaid loans and accrued interest for the entire default period.

Despite these limitations, we publish data on Paris Club debt restructurings separately from the data on other official creditors. Where a default has occurred but we have insufficient information about the amount of debt involved, we show asterisks rather than values for the applicable year and we record the default in the annual global total number of defaults. For some long-running defaults not yet resolved, we show Paris Club country data for total loans, published annually for 2008 and subsequent years, as a proxy for the actual amounts involved. Our proxy has two drawbacks: on the one hand, it may include bilateral loans to debtors that are still performing; on the other, it excludes interest arrears on non-performing loans and so underestimates total values.

Other official creditors. This category covers loan arrears by governments due to the MLIs and bilateral official creditors, including national export credit and development agencies, not shown

⁴ Loans by the International Development Association (IDA), the World Bank’s concessional lending arm, are not included in the World Bank totals we report, but are a component of the “other official creditors” category.

separately. In most cases, our source for the country-by-country data is the World Bank's World DataBank, which reports cumulative annual amounts of unpaid interest and principal, as well as restructured debt and write-offs of interest and principal, in the years they occurred.⁵ We use this data as our proxy for annual amounts of other official debt in default on a country-by-country and aggregate basis from 1970 onwards. There are two main drawbacks with this approach. First, to some degree, the country totals will underestimate the annual value of official debt in default, because they do not take account of the total loan amounts outstanding when payment defaults take place. Second, as highlighted by Cruces and Trebesch (2011), there may be errors in some of the country data the World Bank reports.⁶ Despite these shortcomings, we believe that our proxy provides a reasonable approximation of the global amounts of this category of debt in default since 1970.

To calculate annual country-by-country values for the other official creditor category and to minimize double-counting, where relevant we make the following adjustments: we deduct World Bank loans in arrears in each year they are reported from the official creditor total compiled by the World DataBank; and we deduct restructured Paris Club debt from the residual official creditor values in years when the latter are larger. We make this second adjustment because the World DataBank records restructured official debt and debt write-offs in the years they occur, while the Paris Club reports its data in the year agreements are reached with the debtor government.

Our treatment of Liberia's official arrears in 2008 illustrates how we make these adjustments. To start, for this category the World DataBank reports cumulative arrears of principal and interest arrears, plus write-offs of principal and interest during the year, as US\$1,412 million. From this total, we subtract World Bank arrears of US\$179 million reported separately, and Paris Club restructurings of principal and interest of US\$1,043 reported separately. The residual, US\$190 million, is recorded in the other official creditor category of the database.

Private creditors. This category refers to foreign currency-denominated lending to governments and private sector entities by foreign commercial creditors, including bondholders, banks and

⁵ The World DataBank data on official creditors' arrears exclude arrears on IMF lending.

⁶ Cruces and Trebesch cite instances where data on debt restructurings from this source are not consistent with data from other credible sources.

suppliers. Our main source for the country-by-country data is the World Bank's World DataBank, which reports cumulative annual amounts of unpaid interest and principal for this category of creditors, as well as write-offs and restructurings. This data set has the same drawbacks as for the official creditor data taken from the same source and, in addition, does not differentiate between public and private sector borrowers. We utilize these data in cases where we do not have separate data on bank loans and bonds, when the reported private creditor amounts are larger than the available data on bank loans and bonds, and when we have sufficient information from other sources that shows arrears by private sector borrowers in the country are a small share of the total. To minimize double-counting, we subtract the annual bank loans and bond amounts from the annual private creditor values. Where a default has occurred but we have insufficient information to estimate the amount of debt involved, we show asterisks rather than values for the applicable year and we record the default in the annual global total number of defaults.

Foreign currency bank loans. This category refers to foreign currency-denominated bilateral and syndicated loans to governments by commercial banks. For bank loan defaults resolved through a formal restructuring process and involving interest arrears, the amounts of debt restructured (or subject to debt buybacks) reported by Cruces and Trebesch (2011) and others generally serve as our starting point. Utilizing available information on the original terms of the loans, which usually include a variable rate of interest (typically London Interbank Offered Rate [LIBOR]) plus a spread, we compute cumulative interest arrears for the years prior to the resolution of the default and add them to the loan amounts outstanding for each year that loans are determined to be in default. In cases where bank debt restructurings are not preceded by a payment default, we include the debt amount in the year(s) in which the workout process occurred. Where bank loan defaults remain unresolved, we develop our annual estimates of default amounts from information on the original loans reported by Exotix (2011) and others; these data could ultimately be revised based on updated information as and when the debt is formally restructured. When defaulted obligations are denominated in another currency, we use applicable end-of-period exchange rates to convert amounts into US dollars. Where a default has occurred but we have insufficient information to estimate the amount of debt involved, we show asterisks rather than values for the applicable year and we record the default in the annual global total number of defaults.

Foreign currency bonds. This category refers to foreign currency-denominated bonds and other marketable securities issued by governments. Where bond interest is due but unpaid, we estimate cumulative interest arrears for the years from the start to the end of the bond default based on reported bond coupons. We add these amounts to the outstanding face value of the bond for each year of default. In cases where no payment default has occurred but old bonds are subject to an exchange proposed by the government for new bonds, which results in creditor losses, we view the face value of eligible bonds to be in default from the point when an exchange is announced to when it is completed. We view a resumption of normal debt service on existing bonds or, more typically, the completion of a bond exchange as the point at which a bond default has been resolved. This is the case in a bond exchange even when some bondholders—known as holdout creditors—do not tender their bonds.⁷ Where defaulted bonds are denominated in another currency, we used applicable end-of-period exchange rates to convert amounts into US dollars.

Local currency debt. This category refers to debt issued by a government in its own currency.⁸ As already noted, local currency debt defaults are only sporadically reported as such. As a result, our estimates, which are gathered from national sources and/or are noted in IMF country reports, are provisional. The majority of these defaults tend to be resolved quickly. In most cases, we identify the principal amount of the debt involved and estimate interest arrears based on prevailing interest rates on government debt near the time of the default. When central bank notes are exchanged for new notes on unfavourable terms, we use the amounts outstanding reported in the IMF's *International Financial Statistics* closest to the exchange date. We use applicable end-of-period exchange rates to convert amounts of estimated defaulted debt into US dollars. Where a default has occurred but we have insufficient information to estimate the amount of debt involved, we show asterisks rather than values for the applicable year and we record the default in the annual global total number of defaults.

Summary data. In this section of the CRAG database, the country-by-country data for sovereign defaults are aggregated in global totals. The data on the total number of sovereign issuers are

⁷ Holdouts are not always the only creditors who fail to participate in bond exchanges. Some bonds may be mislaid, forgotten or locked up in estates, and such creditors can surface long after the conclusion of a bond exchange. In some instances, the government may later issue additional debt on the same terms as the bond exchange to settle these claims.

⁸ For sovereigns that are members of monetary unions, debt denominated in the common currency is regarded as foreign currency for purposes of this analysis.

estimated by the authors. Data on the number of sovereigns in default are tabulated based on the total number of sovereigns reported in default in the CRAG database for each year. The global total nominal US-dollar amounts for other official creditor and private creditor categories in 2015 are authors' estimates. The categories for data on sovereign defaults by debtor are based on IMF definitions for advanced economies (4 sovereigns in the database) and Heavily Indebted Poor Countries (HIPC) (39), and on the JP Morgan Emerging Market Bond Index (EMBI) Global Diversified Index definitions for emerging and frontier market sovereigns (48), while the other developing countries group (54) includes the remaining sovereigns in the database. Our roll-up of the country data, along with the aggregate value of Paris Club lending, as well as world public debt and world GDP sourced from the April 2016 IMF *World Economic Outlook* and the World DataBank (2016), provide a global perspective on the scale of annual sovereign defaults from 1970 onwards.

5. Assessing Data Reliability

Using a similar approach to that followed by Cruces and Trebesch (2011), we score the relative data quality of our country-by-country estimates of debt in default. On a scale of 1 (denoting high reliability) to 4 (denoting least reliability), we determine a summary score based on the average of the subscores assigned to four variables:

1. years in which default occurred
2. types of debt in default
3. characteristics of debt restructured (e.g., interest rate, original maturity)
4. consistency of information from different sources

Of course, there must be an element of judgment in an exercise that measures data reliability in relative terms. The following example, for Jamaica, helps illustrate the process we follow. We highlight Jamaica because, under our definition, it has been in default on six debt types—IMF lending, other official creditors, private creditors, foreign currency bank loans, foreign currency bonds and local currency debt—at various times over the 1970–2015 period.

For Jamaica, since we have a fair degree of confidence that we have identified all cases of default and the years in which they occurred, we assign a score of 3 to this subcategory. We are relatively confident that we have identified all the types of debt involved in each case, so we

score this subcategory at 2. We score our knowledge about the characteristics of the debt restructured at 3, because we are less confident about our estimates of the value of debt restructured in the 1970s and 1980s than for debt restructured more recently. We find that the information from the different sources we consulted is fairly consistent, but since arrears owed to official creditors are taken from the World Bank's World DataBank and are subject to revision, we score this factor at 3. Finally, averaging the results of the subcategories leads to an overall score of 3.

6. Sovereign Defaults in Historical Perspective

The Bank of Canada's CRAG database and its future updates are helpful to researchers analyzing the economic and financial effects of sovereign defaults from 1970 onwards. The data set is particularly useful since it facilitates comparisons of the scale of individual and multiple default events with earlier episodes. As such, it can contribute to our understanding of ongoing risks to global financial stability. The commentary that follows highlights some of the most noteworthy trends.

From the historical record, we know that for nearly 200 years the story of sovereign defaults has centred mainly, though not exclusively, on foreign currency bonds and other marketable securities.⁹ Cross-border bond financing for governments emerged in the 1820s, when newly independent states in Latin America and other regions, as well as some longer-established sovereigns, began issuing bonds denominated in foreign currency in European financial centres. Defaults soon followed on a substantial scale and persisted well into the 20th century. Defaults on local currency-denominated debt also occurred but were less frequent.

After the Second World War, owing to pervasive national controls on capital movements, cross-border bond issuance by governments fell to low levels, as did defaults, and both remained low over nearly four decades. For a relatively brief period, in the 1970s and 1980s, foreign currency-denominated loans by banks eclipsed bonds in importance. Many developing and East European countries defaulted on bank loans in the 1980s and 1990s, leading to creditor losses. The banks'

⁹ This section of the report draws in part on previous work published by Cruces and Trebesch (2011), Rieffel (2003), Reinhart and Rogoff (2009) and Suter (1992).

subsequent exit from this business laid the groundwork for low- and middle-income sovereigns to regain access to cross-border bond markets in the 1990s, which continues to this day.

The period since the 1990s is also noteworthy because of growing cross-border investments in the local currency-denominated market debt of emerging-market sovereigns. This development helped trigger a number of defaults involving such sovereigns as Russia, Argentina and Jamaica, often accompanied by restructurings of their foreign currency bonds. These latter defaults, though also increasing, nonetheless remain well below their pre-Second World War historical peaks.

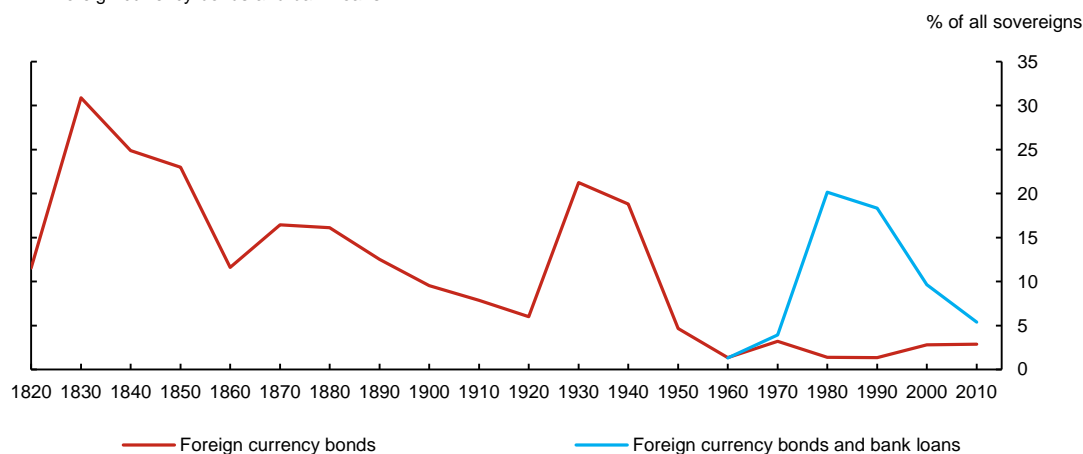
Chart 1 provides a snapshot of trends in defaults on foreign currency bonds and bank loans from 1820 to 2010.¹⁰ Because of limited historical bond data for much of this period, we calculate unweighted default *rates*, i.e., governments in default as a per cent of *all* governments.¹¹ For bonds, three peak default periods stand out—between the 1830s and 1850s, when default rates exceeded 25 per cent; in the 1870s, when default rates averaged 18 per cent; and in the 1930s, when they reached 21 per cent. Of note, too, is the sharp decline in bond defaults after the Second World War that persisted through the 1980s. The resolution of many pre-war bond defaults was the main driver of the fall in the default rate. At the same time, the fragmentation of the early post-Second World War cross-border financial markets limited bond market access to only the most creditworthy borrowers, and so defaults on new issues were low.

¹⁰ The data in Chart 1 are partly based on data previously published by Beers and Chambers (2006).

¹¹ By our count, the total number of sovereigns globally was 36 in 1820, 65 in 1900, 105 in 1950 and 214 in 2015. Reinhart and Rogoff (2009) have calculated historical sovereign default rates weighted by estimated aggregated GDP. However, due to reliability issues relating to pre-Second World War national income data in many countries, we have not replicated this approach here.

Chart 1: Sovereign default rates

Foreign currency bonds and bank loans



Default rates are 10-year averages of annual data and 5-year average for 2010

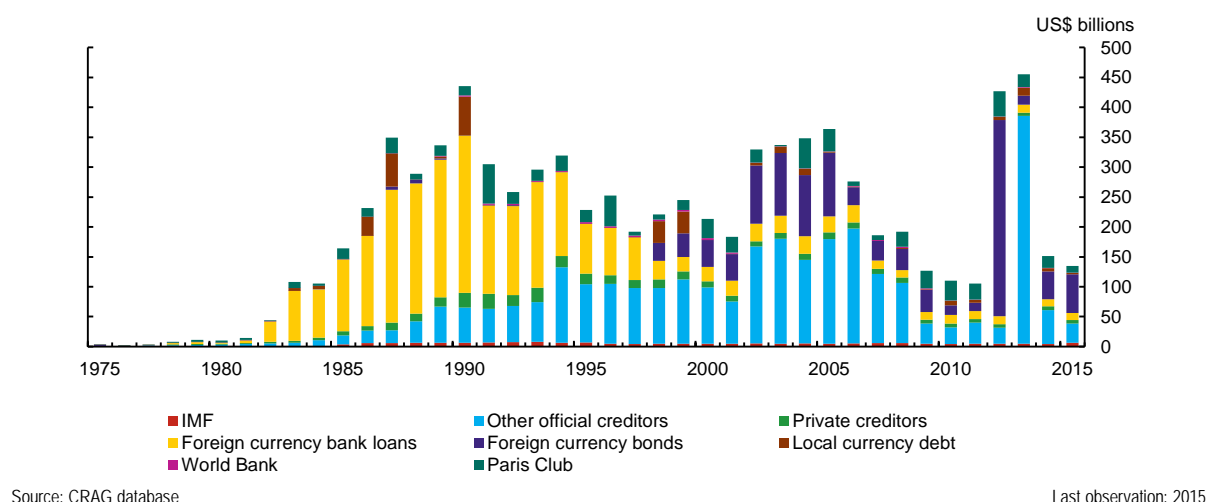
Source: Suter (1992) and CRAG database

Last observation: 2015

Prior to the Second World War, sovereign defaults on official loans played only an intermittent role. Then, after 1945, lending to governments by the IMF and other newly established MLIs quickly gained prominence. These institutions, together with national export credit and development agencies, were launched in part to fill perceived gaps in public finance left by shrinkage in the cross-border bond markets. They increasingly targeted loans to developing country governments on concessional terms, and initially defaults on official loans were low.

By the 1980s, however, the sharp rise in sovereign defaults on foreign currency bank loans shown in Chart 1 was accompanied by growing defaults on loans from official creditors. Even arrears on IMF loans surfaced, although their size was minor compared with other creditors. As seen in Chart 2, public debt in default exceeded US\$400 billion by 1990, with debt owed to official creditors accounting for about 18 per cent of the total. By 1995, the share of official creditor debt exceeded 50 per cent. The factors driving both bank loans and official loans into default were often closely linked, owing to the adverse fiscal impact in many countries from the spike in world oil prices and in US short-term interest rates. The latter directly impacted the cost of syndicated bank loans contracted by many sovereign borrowers and helped ratchet up the real burden of their public debt.

Chart 2: Total sovereign debt in default, by creditor



Many of the defaults on official loans continued for long periods, owing to internal economic and political difficulties of the borrowers and the reluctance of creditors to reschedule loans. However, by the 1980s, official debt restructurings led by the Paris Club became a frequent occurrence. Yet defaults on official debt persisted. This logjam eased beginning in the mid-1990s, thanks to the multilateral HIPC initiative, launched with strong support from the IMF and the World Bank (IMF 2016d).

Under the program, now nearing completion, 39 low-income governments became eligible for substantial reductions in their official debt linked to implementation of agreed economic policy reforms.¹² Much of the debt was written off by bilateral official creditors, but the IMF and other MLIs also agreed to participate through the MDRI.¹³ As a result, and as seen in Chart 2, the dollar amounts of IMF, World Bank, Paris Club and other official debt in default have mostly fallen since 2006.

That said, two recent developments are worth noting: one is the spike in problematic official debt that occurred in 2013 (Chart 2). This resulted mainly from the restructuring (albeit without any interruption of scheduled debt service) of official loans to Greece, Ireland and Portugal agreed by

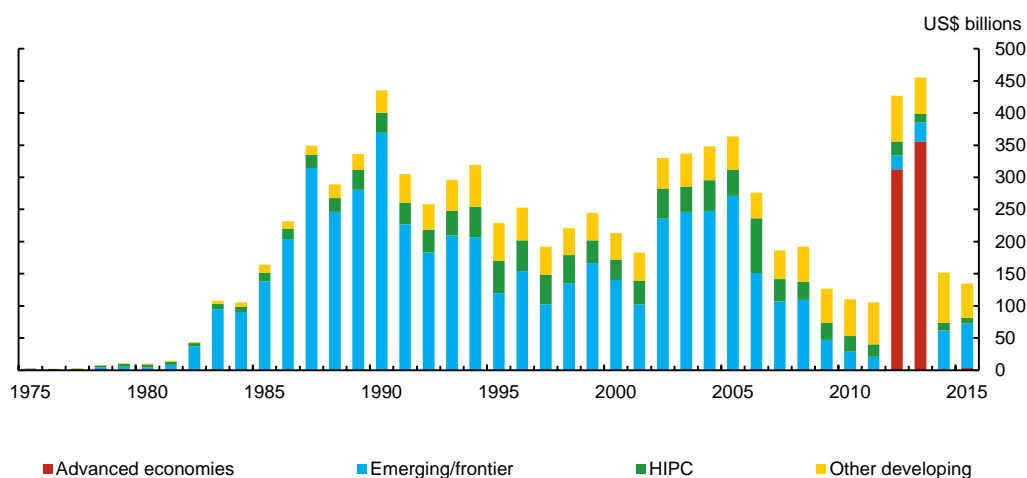
¹² Three sovereigns—Eritrea, Somalia and Sudan—remain eligible for HIPC debt relief but have not yet commenced the process.

¹³ Write-offs of IMF and MLI loans, which under MDRI can reach 100 per cent, are funded by government donors to avoid damaging the institutions' balance sheets and weakening their preferred creditor status.

their European Union partners.¹⁴ While fiscal pressures in the euro area have abated since then, Greece remains a conspicuous exception, as highlighted by the delay in its payment of US\$2.2 billion due to the IMF last year.

The second notable development is that loan arrears still persist in the majority of HIPC countries, amounting to about US\$9 billion in 2015 (Chart 3), mainly due to the sluggish pace at which non-Paris Club official creditors are implementing debt relief. Official creditor holdouts may be less well known than litigious holdout bondholders, but, like them, can still slow the resolution of defaulted debt.

Chart 3: Sovereign debt in default, by debtor



Source: CRAG database

Last observation: 2015

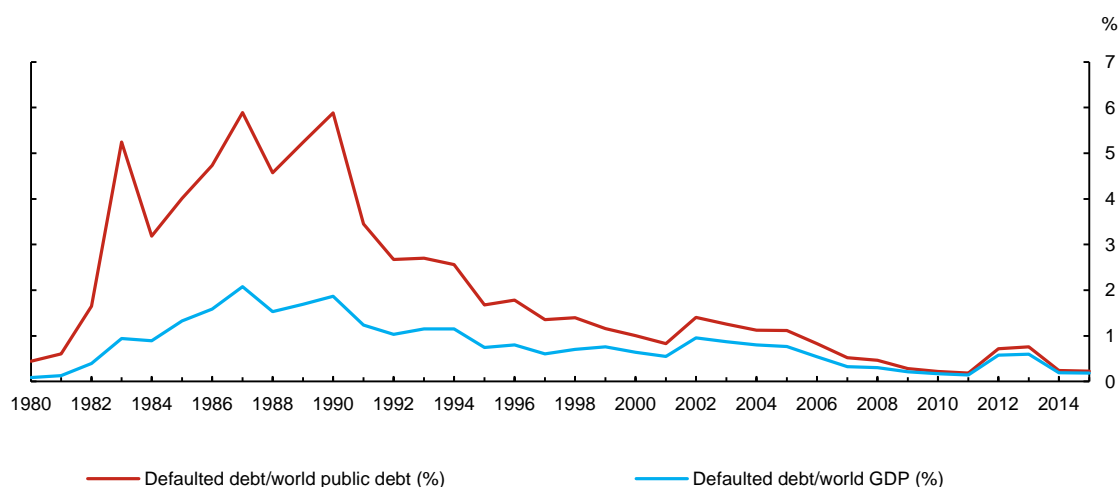
Chart 4 scales the nominal value of debt in default by nominal global public debt and GDP to measure the relative importance of sovereign defaults. At the start of the 1980s, defaults had minimal impact globally. However, by the middle of the decade, fiscal stresses affecting low- and middle-income countries were significant—the sovereign debt that defaulted, was restructured and in many cases ultimately written down peaked at about 6 per cent of global

¹⁴ For Greece, interest rates and charges were reduced and partly deferred, while average maturities of European Union/euro area official loans to Greece, Ireland and Portugal were extended by up to seven years. Given their terms, these official debt restructurings are consistent with our definition of sovereign defaults because they result in creditor losses in present-value terms.

public debt. The increase was milder in terms of global GDP, rising from near zero to just over 2 per cent.

Chart 4 also shows that the global footprint left by these debt workouts has since faded, despite Argentina's big default in 2001 and the more recent restructurings of sovereign bonds and official loans in the euro area. Nonetheless, the frequency of such events may be on the rise again and could be more closely correlated with rising public debt burdens than at any time since the 1930s. With many advanced and emerging market governments grappling with fiscal challenges, these are trends worth watching alongside other potential risks to global financial stability.

Chart 4: Sovereign debt in default as a share of world public debt and world GDP



Source: CRAG database

Last observation: 2015

7. Conclusion

The Bank of Canada's CRAG database is useful to researchers analyzing the economic and financial effects of individual sovereign defaults and, importantly, the impact on global financial stability of episodes involving multiple sovereign defaults. Our database draws on previously published data sets compiled by various official and private sector sources. It combines elements of these, together with new information, to develop estimates of stocks of government obligations in default, including bonds and other marketable securities, bank loans and official loans in default, valued in US dollars, from 1970 onwards on both a country-by-country and a

global basis. The database applies a common standard for determining when defaults occur. However, documenting which sovereigns have defaulted, the time frame of such defaults and the amounts of debt affected can be challenging. While we have relied on sources we consider reliable, our database of sovereign defaults may not be exhaustive. Additional information on defaults, as it becomes available, will be incorporated in future database updates.

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Appendix

Below are sources for global and country-by-country data used to compile the CRAG database.

Global Aggregates

IMF (2013a, 2016a–c), J.P. Morgan (2016), Lazard (2015), Paris Club (2016), World Bank (1980–2015), World DataBank (2016) via Haver.

1. Afghanistan

Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1997–2002), IMF Article IV Consultation - Staff Reports (2005–12), IMF (2016d), Paris Club (2016), World Bank Financial Statement (2000), World DataBank (2016) via Haver. Note: data on debt owed to other official creditors are not available prior to 1993 and for private creditors prior to 1992.

2. Albania

Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

3. Algeria

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2016), World DataBank (2016) via Haver.

4. Angola

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), IMF (2016a), Linzmayer (2016), Paris Club (2016), World DataBank (2016) via Haver.

5. Antigua and Barbuda

Das, Papaioannou and Trebesch (2012), Durant (2012), IMF (2013e), IMF Article IV Consultation - Staff Reports (2004–14), Paris Club (2016), Schipke, Cebotari and Thacker (2013).

6. Argentina

Argentina (2016), authors' conversation with the IMF Staff, Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), Paris Club (2016), Sturzenegger and Zettelmeyer (2005), U.S. SEC Financial Statements (2003, 2006, 2011), World DataBank (2016) via Haver.

7. Armenia

World DataBank (2016) via Haver.

8. Azerbaijan

World DataBank (2016) via Haver.

9. Bangladesh

World DataBank (2016) via Haver.

10. Belarus

World DataBank (2016) via Haver.

11. Belize

Beers and Chambers (2006), Cruces and Trebesch (2011), Durant (2012), Exotix (2011), IMF (2014), Schipke, Cebotari and Thacker (2013), World DataBank (2016) via Haver.

12. Benin

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World DataBank (2016) via Haver.

13. Bhutan

World DataBank (2016) via Haver.

14. Bolivia

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

15. Bosnia & Herzegovina

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), IMF Annual Reports (1993–95), Paris Club (2016), Stanič (2001), World DataBank (2016) via Haver.

16. Botswana

World DataBank (2016) via Haver.

17. Brazil

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver. Note: for 2014, the World DataBank reports a reduction in debt stocks and debt stocks rescheduled of US\$580 million and US\$2.386 million, respectively. We do not include these values in the CRAG database because they do not differentiate between public and private sector obligors and we find no evidence from other sources that they reflect official lending to the government.

18. Bulgaria

Cruces and Trebesch (2011), Corporation of Foreign Bondholders (1987), Das, Papaioannou and Trebesch (2012), Foreign Bondholders Protective Council (1987), Paris Club (2016), World DataBank (2016) via Haver.

19. Burkina Faso

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World DataBank (2016) via Haver.

20. Burundi

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), Beers and Chambers (2006), World DataBank (2016) via Haver.

21. Cambodia

Boughton (2001), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1978–93), IMF (2013a), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

22. Cameroon

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

23. Cape Verde

Beers and Chambers (2006), Cruces and Trebesch (2011), World DataBank (2016) via Haver.

24. Central African Republic

Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF (2016d), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

25. Chad

Boughton (2001), IMF Annual Report (1984), IMF (2016d), Paris Club (2016), World DataBank (2016) via Haver.

26. Chile

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

27. Colombia

World DataBank (2016) via Haver.

28. Comoros

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank Financial Statement (2000), World DataBank (2016) via Haver.

29. Rep. of Congo (Brazzaville)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2016d), Paris Club (2016), World Bank Financial Statements (2000–01), World DataBank (2016) via Haver.

30. Dem. Rep. of Congo (Kinshasa)

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1988–89, 1992–2002), IMF (2016d), Paris Club (2016), Rieffel (1985), World Bank Financial Statements (2000–02), World DataBank (2016) via Haver.

31. Cook Islands

AsDB SDBS (2016), Beers and Chambers (2006).

32. Costa Rica

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

33. Côte d'Ivoire

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), IMF (2016d), Paris Club (2016), World Bank (2012), World Bank Financial Statements (2001, 2005–08), World DataBank (2016) via Haver.

34. Croatia

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016).

35. Cuba

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2016), Rieffel (1985). Note: Cuba is reported to have both Paris Club and other bilateral official debt in default, but we have insufficient information on the latter to determine the years of default and the estimated amounts involved.

36. Cyprus

European Commission (2013a), IMF (2013c).

37. Czechoslovakia

Corporation of Foreign Bondholders (1986), Foreign Bondholders Protective Council (1986).

38. Djibouti

Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

39. Dominica

Cruces and Trebesch (2011), Durant (2012), IMF (2004), IMF (2013g), Schipke, Cebotari and Thacker (2013), World DataBank (2016) via Haver.

40. Dominican Republic

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Exotix (2011), Schipke, Cebotari and Thacker (2013), World DataBank (2016) via Haver.

41. Ecuador

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Sturzenegger and Zettelmeyer (2005), World DataBank (2016) via Haver.

42. Egypt

Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

43. El Salvador

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

44. Equatorial Guinea

Paris Club (2016).

45. Eritrea

World DataBank (2016) via Haver.

46. Ethiopia

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

47. Fiji

World DataBank (2016) via Haver.

48. Gabon

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), IMF (2014d), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

49. Gambia

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF Annual Reports (1985–86), IMF (2016d), Paris Club (2016), World DataBank (2016) via Haver.

50. Georgia

Authors' conversations with National Bank of Georgia staff, Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Paris Club (2016), World DataBank (2016) via Haver.

51. Ghana

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2016d), Linzmayer (2016), Paris Club (2016), World DataBank (2016) via Haver.

52. Greece

IMF (2013b, d, 2015a), Flynn and Pessoa (2014), Zettelmeyer, Trebesch and Gulati (2013).

53. Grenada

Beers and Chambers (2006), Bloomberg (2015), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), IMF (2013d), Paris Club (2016), Schipke, Cebotari and Thacker (2013), World DataBank (2016) via Haver.

54. Guatemala

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2016), World DataBank (2016) via Haver.

55. Guinea

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

56. Guinea-Bissau

Das, Papaioannou and Trebesch (2012), (IMF 2014d), Paris Club (2016), IMF (2016d), World DataBank (2016) via Haver.

57. Guyana

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1984–90), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

58. Haiti

Boughton (2001), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1988–89, 1993–94), IMF (2016d), Paris Club (2016), World Bank Financial Statement (2004), World DataBank (2016) via Haver.

59. Honduras

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1988–90), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

60. Hungary

Corporation of Foreign Bondholders (1976), Foreign Bondholders Protective Council (1976), World DataBank (2016) via Haver.

61. India

World DataBank (2016) via Haver.

62. Indonesia

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

63. Iran

Rieffel (2003), Suter, C. (1992), World Bank (2013), World DataBank (2016) via Haver.

64. Iraq

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1992–2003), IMF (2013a), IMF Article IV Consultation - Staff Reports (2005–13), Paris Club (2016), World Bank Financial Statements (2001–03, 2005), World DataBank (2016) via Haver. Note: data on debt owed to other official creditors are not available prior to 2002.

65. Ireland

European Commission (2013b), European Union (2013).

66. Jamaica

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), Exotix (2011), Grigorian, Alleyne and Guerson (2012), IMF Annual Reports (1986–87), IMF (2013g), Paris Club (2016), Rieffel (1985), Schipke, Cebotari and Thacker (2013), World DataBank (2016) via Haver.

67. Jordan

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

68. Kazakhstan

World DataBank (2016) via Haver.

69. Kenya

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2016), World DataBank (2016) via Haver.

70. Korea (North)

Alpert (2012), Exotix (2011), Haggard and Noland (2010), Linzmayer (2016), Paris Club (2016). Note: Russia's \$10 billion writedown of loan arrears is included in 2012 total Paris Club debt in default. In addition to Paris Club debt, North Korea is reported to have other bilateral official debt in default, but we have insufficient information on the latter to determine the years of default and the amounts involved. Haggard and Noland (2010) report that central bank note exchanges in 1992 and 2009 were on confiscatory terms, but we have insufficient information to estimate the amounts affected.

71. Kuwait

Ghabra (1991), IMF (2016a).

72. Kyrgyzstan

Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

73. Laos

World DataBank (2016) via Haver.

74. Lebanon

World DataBank (2016) via Haver.

75. Lesotho

World DataBank (2016) via Haver.

76. Liberia

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1985–2008), IMF (2016e), Paris Club (2016), World Bank (2012), World Bank Financial Statements (2000–08), World DataBank (2016) via Haver.

77. Macedonia

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2016), Stanič (2001), World DataBank (2016) via Haver.

78. Madagascar

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

79. Malawi

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF (2016d), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

80. Maldives

World DataBank (2016) via Haver.

81. Mali

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World DataBank (2016) via Haver.

82. Mauritania

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

83. Mauritius

World DataBank (2016) via Haver.

84. Mexico

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

85. Moldova

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

86. Mongolia

Beers and Chambers (2006), Exotix (2011), World DataBank (2016) via Haver.

87. Montenegro

World DataBank (2016) via Haver.

88. Morocco

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

89. Mozambique

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), Rieffel (1985), World Bank (2012), World DataBank (2016) via Haver.

90. Myanmar

IMF (2016a), Linzmayer (2016), Paris Club (2016), World Bank Financial Statements (2000, 2004, 2008–09), World DataBank (2016) via Haver.

91. Nauru

Asian Development Bank (AsDB) Annual Reports (2001–08), Firebird Global Master Fund II Ltd. v. Republic of Nauru (2012), Mellor (2014), Pacific Islands Report (2003).

92. Nepal

World DataBank (2016) via Haver.

93. Nicaragua

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1984–85), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

94. Niger

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

95. Nigeria

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Paris Club (2016), World DataBank (2016) via Haver.

96. Pakistan

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Sturzenegger and Zettelmeyer (2005), World DataBank (2016) via Haver.

97. Panama

Beers and Chambers (2006), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1988–92), IMF (2013a), Paris Club (2016), World DataBank (2016) via Haver.

98. Papua New Guinea

World DataBank (2016) via Haver.

99. Paraguay

Beers and Chambers (2006), Cruces and Trebesch (2011), World DataBank (2016) via Haver.

100. Peru

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1985–93), IMF (2013a), Paris Club (2016), Schipani and Wigglesworth (2015), World DataBank (2016) via Haver. Asterisks indicating local currency debt in default refer to obligations debt issued subsequent government land reforms of the 1960s and 1970s that have not been serviced since the 1980s. The government has acknowledged these obligations but the

amounts owing are in dispute with creditors and are subject to ongoing litigation in domestic courts and before an arbitration tribunal pursuant to the US-Peru Trade Promotion Agreement.

101. Philippines

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

102. Poland

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Diwan and Saldanha (1991), Foreign Bondholders Protective Council (1976), Paris Club (2016), Rieffel (1985), World DataBank (2014) via Haver.

103. Portugal

European Commission (2013c), European Union (2013), Flynn and Pessoa (2014).

104. Puerto Rico

Hitchcock, Petek and Aldrete-Sanchez (2015). Note: the default in 2015 refers to bonds of the Public Finance Corp. (PFC), a borrowing arm of the Commonwealth of Puerto Rico. As a US territory, Puerto Rico issues bonds according to contractual practices of the US municipal bond market. We include PFC bonds since they are “tax supported” obligations, meaning that they are a claim on government tax revenues.

105. Romania

Boughton (2001), Cruces and Trebesch (2011), Corporation of Foreign Bondholders (1975), Das, Papaioannou and Trebesch (2012), Diwan and Saldanha (1991), Flynn and Pessoa (2014), Foreign Bondholders Protective Council (1979), IMF Annual Report (1986), IMF (2013a), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

106. Rwanda

Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World DataBank (2016) via Haver.

107. St. Kitts & Nevis

Durant (2012), IMF (2013d, f), IMF Article IV Consultation - Staff Reports (2001–14), Paris Club (2016), Schipke, Cebotari and Thacker (2013), World DataBank (2014) via Haver.

108. St. Lucia

World DataBank (2016) via Haver.

109. St. Vincent and the Grenadines

World DataBank (2016) via Haver.

110. Samoa

World Bank Financial Statement (2007), World DataBank (2016) via Haver.

111. São Tomé and Príncipe

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

112. Senegal

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2016d), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

113. Serbia

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1993–2000), Paris Club (2016), Stanič (2001), World Bank Financial Statements (2001, 2006), World DataBank (2016) via Haver.

114. Seychelles

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), IMF (2013d), Paris Club (2016), Schipke, Cebotari and Thacker (2013), World Bank Financial Statements (2003–07), World DataBank (2016) via Haver.

115. Sierra Leone

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1985–94), IMF (2016d), Paris Club (2016), Rieffel (1985), World Bank (2012), World DataBank (2016) via Haver.

116. Slovenia

Beers and Chambers (2006), Cruces and Trebesch (2011), Stanič (2001).

117. Somalia

Boughton (2001), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1985–2015), IMF (2013a), IMF (2016d), Paris Club (2016), Word Bank Financial Statements (2000, 2004, 2008–09), World DataBank (2016) via Haver.

118. Solomon Islands

AsDB SDBS (2016), IMF Article IV Consultation - Staff Reports (2004–11), World DataBank (2016) via Haver.

119. South Africa

Beers and Chambers (2006), Cruces and Trebesch (2011).

120. Sri Lanka

Das, Papaioannou and Trebesch (2012), Paris Club (2016), World DataBank (2016) via Haver.

121. Sudan

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1984–2015, IMF (2013d, 2016d), Paris Club (2016), Rieffel (1985), World Bank Financial Statements (2000, 2004, 2008–09), World DataBank (2016) via Haver.

122. Suriname

Beers and Chambers (2006), IMF Article IV Consultation - Staff Reports (2003–14).

123. Swaziland

World DataBank (2016) via Haver.

124. Syria

Paris Club (2016), World Bank Financial Statements (2001–02), World DataBank (2016) via Haver.

125. Tajikistan

World DataBank (2016) via Haver.

126. Tanzania

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1985–86), IMF (2016d, f), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

127. Thailand

World DataBank (2016) via Haver.

128. Togo

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016d), Paris Club (2016), Rieffel (1985), World Bank Financial Statements (2004, 2008), World Bank (2012), World DataBank (2016) via Haver.

129. Tonga

World DataBank (2016) via Haver.

130. Trinidad & Tobago

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016).

131. Tunisia

World DataBank (2016) via Haver.

132. Turkey

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Rieffel (1985), World DataBank (2016) via Haver.

133. Turkmenistan

World DataBank (2016) via Haver.

134. Uganda

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Flynn and Pessoa (2014), IMF (2016d), Paris Club (2016), Rieffel (1985), World Bank (2012), World DataBank (2016) via Haver.

135. Ukraine

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2015b), Olearchyk (2015), Paris Club (2016), Sturzenegger and Zettelmeyer (2005), World DataBank (2016) via Haver.

136. Uruguay

Cruces and Trebesch (2011), Sturzenegger and Zettelmeyer (2005)

137. USSR/Russia

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Diwan and Saldanha (1991), Paris Club (2016), Sturzenegger and Zettelmeyer (2005), World DataBank (2014) via Haver.

138. Uzbekistan

World DataBank (2016) via Haver.

139. Vanuatu

World DataBank (2016) via Haver.

140. Venezuela

Beers and Chambers (2006), Cruces and Trebesch (2011), Exotix (2011), World DataBank (2016) via Haver.

141. Vietnam

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1984–93), Paris Club (2016), World DataBank (2016) via Haver.

142. Yemen

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), World Bank (2012), World DataBank (2016) via Haver.

143. Yugoslavia

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2016), Stanič (2001).

144. Zambia

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1985–95), IMF (2016d), Paris Club (2016), Rieffel (1985), World Bank (2012), World DataBank (2016) via Haver.

145. Zimbabwe

Corporation of Foreign Bondholders (1981), IMF Annual Reports (2001–15), Makoshori (2015), Paris Club (2016), Republic of Zimbabwe (2015), World Bank Financial Statements (2001–15), World DataBank (2016) via Haver. Foreign currency bonds in default since 2009 reflect US dollar obligations originally owed to mining companies by the Reserve Bank that were assumed by the government in 2015.