

BoC–BoE Sovereign Default Database: Methodology, Assumptions and Sources

by David Beers,¹ Elliot Jones,² Karim McDaniels³ and Zacharie Quiviger³

¹ Center for Financial Stability
New York
dbeers@the-cfs.org

² Financial Markets Department
Reserve Bank of New Zealand
elliott.jones@rbnz.govt.nz

³ Financial and Enterprise Risk Department
Bank of Canada
kmcdaniels@bankofcanada.ca



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Abstract

Until recently, few efforts were made 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 (BoC), in partnership with the Bank of England (BoE), developed a comprehensive [database](#) of sovereign defaults. The database is posted on the Bank of Canada's website and updated annually. The BoC–BoE database draws on datasets published by various public and private sector sources. It combines elements of these, together with new information, to develop comprehensive estimates of stocks of government obligations in default. These include bonds and other marketable securities, bank loans and official loans, valued in US dollars, for the years 1960 to 2021 on both a country-by-country and a global basis. In addition, we include country and global data on estimated stocks of domestic arrears—late payments by governments—also valued in US dollars. For most countries, data are from 2000 to 2021. Regular updates of the BoC–BoE database help researchers analyze the economic and financial effects of individual sovereign defaults and, importantly, the impact on global financial stability of episodes involving multiple sovereign defaults.

Topics: Debt management; Development economics; Financial stability; International financial markets

JEL codes: F34, G10, G14, G15

Résumé

Jusqu'à récemment, peu d'efforts avaient été 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, la Banque du Canada a développé une [base de données](#) exhaustive de défauts souverains en partenariat avec la Banque d'Angleterre. La [base de données](#), qui se trouve sur le site Internet de la Banque du Canada, est mise à jour annuellement et repose sur des ensembles de données publiées par diverses sources, publiques et privées. Elle permet de produire, à partir de ces données et de nouvelles informations, des estimations complètes du montant des engagements financiers étatiques, à savoir les prêts bancaires, les obligations et autres titres négociables, de même que les prêts publics en situation de défaut, tous exprimés en dollars américains, pour la période allant de 1960 à 2021. Cette information est présentée à la fois pays par pays et de manière agrégée, c'est-à-dire à l'échelle mondiale. De plus, nous présentons les données par pays et à l'échelle mondiale des estimations de la valeur des arriérés intérieurs, c'est-à-dire des retards de paiement des États, également exprimés en dollars américains. Pour la plupart des pays, les données ont été recueillies entre 2000 et 2021. Les mises à jour régulières de la base de données de la Banque du Canada et de la Banque d'Angleterre aident les chercheurs à 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.

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

Codes JEL : F34, G10, G14, G15

1. Introduction

Government debt defaults are a recurring feature of public finance.¹ These defaults typically involve 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.²

Even so, comprehensive data on sovereign defaults have been hard to come by. This reflects several factors. An important reason is that no single internationally recognized definition of what constitutes a sovereign default exists. 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. Launched in 2014, the Bank of Canada (BoC)–Bank of England (BoE) sovereign default database helps fill these gaps. It compiles a comprehensive country-by-country and global dataset of government debt in default that applies a common standard for determining when defaults occur.

This paper is organized as follows. We start by proposing a definition of when a sovereign default has occurred on loans from official and private creditors and outline how we identify domestic arrears (Section 2). We next describe the main components of the BoC–BoE database (Section 3). We highlight how we compile the data and, where applicable, the methods employed to develop estimates (Section 4). We also score the reliability of default data for each country (Section 5). The final section offers some conclusions (Section 6). The paper also includes a list of references, and an appendix provides a listing of our data sources for the country-by-country and aggregate data.

2. Determining sovereign defaults and domestic arrears

Sovereign debt is the term commonly used to denote debt issued by national governments and certain fiscally autonomous territories. Like other types of debt, sovereign debt is a contractual obligation. A failure to meet this contractual obligation to pay interest or principal in full on the due date provides one clear-cut example of a sovereign 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, because government responses to financial distress can take many forms, sovereign defaults are often not so explicit. In some cases, we can conclude that, even without an actual interruption of debt service, a default has effectively occurred because actions by the sovereign result in economic losses by creditors. Such losses can vary widely.

¹ For the latest commentary on the database and the authors' findings, see the companion paper, "[BoC–BoE Sovereign Default Database: What's New in 2022?](#)" available on our [web pages](#).

² For a comprehensive overview, see Tomz and Wright (2012).

Consistent with much of the literature on sovereign defaults (Cruces and Trebesch 2011), and the practice of credit-rating agencies (Beers and Chambers 2006; Tudela et al. 2011),³ we consider that a default has occurred when any of the following is true:

- 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
- even absent an outright payment default, creditors incur material economic losses on the sovereign debt they hold in any of these circumstances:
 - 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 favourable terms
 - swaps of sovereign debt for equity (usually relating to privatization programs) on less favourable terms
 - retrospective taxes targeting sovereign debt service payments
 - conversion of central bank notes into new currency of less-than-equivalent face value

In contrast with the issues related to determining when sovereign defaults occur, identifying cases of domestic arrears—also known as fiscal or expenditure arrears—is more straightforward.

Domestic arrears are late payments to civil servants, pensioners or domestic suppliers. The time frame for when payments are considered late is usually defined under local law and consequently varies. Depending on the country, payments are usually considered to be in arrears if they are not made after 30, 60 or 90 days.

3. Features of the BoC–BoE database

The [BoC–BoE sovereign default database](#) tabulates data on debt owed to official and private creditors for all sovereign defaults that we have identified between the years 1960 and 2021.⁴ For each year, we compile the data by type of creditor on both a country-by-country and an aggregated basis 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

³ 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.

⁴ The BoC–BoE database is distinct from and complements the datasets 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.

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.

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 (IBRD)
- International Development Association (IDA)
- Paris Club
- China
- other official creditors
- foreign currency bank loans
- foreign currency bonds
- other private creditors
- local currency debt
- domestic arrears

In addition to the country-by-country components, in most cases the database contains the following aggregate data for the period starting in 1960 and ending in 2021:

- total debt (excluding domestic arrears) in default (in nominal US dollars)
- total identified domestic arrears (in nominal US dollars), most comprehensively for the 2000–2021 period
- 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
- number of sovereign governments with identified domestic arrears
- outstanding Paris Club loans (in nominal US dollars)
- outstanding Chinese official loans (in nominal US dollars)
- global general government or public debt (in nominal US dollars)
- global emerging-market and developing-country gross domestic product (GDP) (in nominal US dollars)
- global GDP (in nominal US dollars)

4. Data sources and data estimation

To construct the BoC–BoE database, we utilize data published by the Asian Development Bank (2022 and earlier years); the IMF (2022 and earlier years); the Paris Club (2022a, 2022b); the World DataBank and the World Bank Group (2022); the IBRD’s annual financial statements (2022 and earlier years); IDA’s annual financial statements (2022 and earlier years); Tweedie, Hagan and Tiwari (2012); Das, Papaioannou and Trebesch (2012); Cruces and Trebesch (2011); Tudela et al. (2011); Beers and Chambers (2006); and Suter (1992). We combine elements of these datasets, 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, IBRD, IDA, Paris Club, China and other official loans in default for the years 1960 through 2021. For domestic arrears, the data are most comprehensive for the years 2000 through 2021.

It is important to highlight that some of our 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 both local currency defaults and domestic arrears, which are not always acknowledged as such by the governments involved and which have been little studied in the literature. Even in 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 credible, our database of sovereign defaults may not be exhaustive. We may have overlooked some defaults, and we may revise our estimates of the US-dollar amounts of debt in default. As we gain additional information on defaults, we will include the data in future database updates. Any errors in the identification and estimation processes employed are, of course, the sole responsibility of the authors.

Below we outline how we estimate values for different types of defaulted debt and for domestic arrears.

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 (in the 1960s) where IMF loans were reprofiled in tandem with restructurings of other debts owed by sovereigns and (from 1960 to 2021) where payment arrears have persisted for extended periods. In addition, the IMF has written off some loans to countries receiving official debt relief under the Multilateral Debt Relief Initiative (MDRI). Our sources on payment arrears and reschedulings are IMF annual reports, Article IV reports on member countries, 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.⁵

⁵ Given their size, we also include short-lived arrears owed to the IMF by Romania, Argentina and Greece of US\$1 billion in 1986, US\$2.9 billion in 2003 and US\$2.2 billion in 2015, respectively.

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 impair 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 preferred creditor status but, like the IMF, have periodically experienced late payments on their loans. Reporting practices on such loans vary, although IBRD and IDA publish reasonably comprehensive data on arrears of principal and interest when they persist for six months or more. We publish separate IBRD and IDA country data on their loans in arrears for the years 1985–2021. In the global totals, we also show the value of IBRD and IDA loans in arrears for the years 1980–1984, a period when they did not identify the relevant individual countries. Our sources are the IBRD's and IDA's annual financial statements. Apart from the IBRD and IDA data just noted, MLI lending, including all 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 22 bilateral official lenders, to other governments. Das, Papaioannou and Trebesch (2012) have published 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 (2022a) website. The data generally show the year and the amounts of each restructuring. In some cases, the Paris Club separately identifies amounts of restructured loans and interest arrears. However, the data do not include the annual amounts of unpaid loans and accrued interest for the entire default period, although in some cases (e.g., Sudan) we also utilize IMF data on Paris Club loan arrears.

Despite these limitations, we publish data on Paris Club loans in default 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 available IMF estimates or Paris Club country data for total loans, published annually for 2008 and subsequent years, as a proxy for the actual amounts involved. Our proxy values based on Paris Club data have two drawbacks: on the one hand, they may include bilateral loans to debtors that are still performing; on the other, they exclude interest arrears on non-performing loans and so underestimate the totals.

China. This category refers to bilateral official loans by China, including government-guaranteed loans from two of its development banks: Export-Import Bank of China and China Development Bank. Like several other bilateral official creditors, China's lending agencies do not publish comprehensive data on debt in arrears or debts that have been restructured or written down. Consequently, our data draw primarily from the following:

- instances where China has provided debt relief, compiled by Hurley, Morris and Portelance (2018) and Kratz, Feng and Wright (2019)
- analysis of China's official lending, by Horn, Reinhart and Trebesch (2019)

- reports by borrowers, the IMF and the media since 2000

Nonetheless, the data are incomplete and so understate the annual totals since they do not include loans when they first become non-performing. In principle, many of them could be included indistinguishably in the other official creditor loans category discussed next.

Other official creditors. This category covers loan arrears and debt write-downs by governments owed to MLIs and bilateral official creditors, including national export credit and development agencies, not shown separately. In most cases, our source for the country-by-country data is the 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.⁶ With a few exceptions (noted in the Appendix), 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. For 1960–1969, our data are drawn mainly from IMF staff reports, Bittermann (1973) and Bornschier, Pfister and Suter (1986). 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.

There are three main drawbacks with our approach to compiling the data:

- Since the World DataBank country data are not available for 1960–1969, we gather data for this period from the IMF and other sources, a process that may underestimate the number of governments and US-dollar values involved.
- The country totals for 1970–2021 also 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.
- As Cruces and Trebesch (2011) note, the country data the World DataBank reports, which are based on information compiled by debtor governments, could contain errors and omissions.⁷

Despite these shortcomings, we believe that our use of alternate sources makes the 1960–1969 data nearly as comprehensive as the data for 1970–2021 and that, for this latter period, in most instances our proxy provides a reasonable approximation of the amounts of debt in default.

To calculate annual country-by-country values for this category and to minimize double counting, where relevant we make the following adjustments:

- From the official creditor totals compiled by the World DataBank, we deduct IBRD and IDA loans in arrears in each year they are reported.
- We deduct Paris Club debt in default from the residual official creditor values in years when the latter are larger. We make this adjustment because the Paris Club reports its data in the year it

⁶ The World DataBank data on official creditors' arrears exclude arrears on IMF lending. For sovereigns where we show loans in default from the IBRD, IDA, the Paris Club and/or China, we show residual World DataBank data values after deducting these amounts.

⁷ Cruces and Trebesch (2011) cite instances where data on debt restructurings from this source, which come from central banks and other national sources, are not consistent with data from other credible sources.

reaches agreement with the debtor government, while the World DataBank records restructured official debt and debt write-offs in the years they occur.

- We deduct bilateral loans restructured, written down or forgiven by China in each year they are separately reported from the residual creditor values.

If, as a result of these steps, the residual value is negative, we show asterisks in the applicable year.

Our treatment of Liberia's defaulted official loans in 2003 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\$2,143 million. From this total, we subtract IBRD arrears of US\$348 million reported separately, IDA arrears of US\$33 million reported separately, and Paris Club restructurings of principal and interest of US\$717 million reported separately. We record the residual, US\$1,045 million, in the other official creditor category of the database.

Private creditors. This category refers to lending to governments by foreign commercial creditors, including bondholders, banks and suppliers, in a foreign currency. For 1960–1969, our principal sources are IMF staff reports and Bittermann (1973). For the 1970–2021 period, our main source for the country-by-country data is the 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 dataset has the same drawbacks as the official creditor data taken from the same source. In addition, it does not always appear to properly differentiate public and publicly guaranteed borrowers from private sector borrowers. We utilize these data in cases where we do not have separate data on bank loans and foreign currency bonds, when the reported private creditor amounts are larger than the 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 bilateral and syndicated loans to governments by commercial banks in a foreign currency. For bank loan defaults resolved through a formal restructuring process and involving interest arrears, we generally start with the amounts of debt restructured (or subject to debt buybacks) reported by Cruces and Trebesch (2011) and others. Utilizing available information on the original terms of the loans, which typically include a variable rate of interest—often the 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 we determine the default values. In cases where a payment default did not precede a bank debt restructuring, 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 Tellimer (2019) and others; we may revise these data based on updated information if 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 bonds and other marketable securities issued by governments in a foreign currency. 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 a government announces an exchange 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.⁸ Where defaulted bonds are denominated in another currency, we use applicable end-of-period exchange rates to convert amounts into US dollars. In cases where foreign currency bonds are repudiated—i.e., when debt is not recognized by a new government, regime or successor state or states (e.g., Cuba in 1961–1962, Yugoslavia in 1992)—we record the face value of the repudiated bonds in the years they default but do not include estimates of interest arrears unless and until the bonds are recognized by current or successor governments or regimes.⁹

Local currency debt. This category refers to debt issued by a government in its own currency.¹⁰ As already noted, local currency debt defaults are only sporadically reported as such. As a result, our estimates, which we gather from Mas (1995), national sources and 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, where relevant, estimate interest arrears based on prevailing interest rates on government debt near the time of the default. To convert amounts of estimated defaulted debt into US dollars, we use the market exchange rate—or, where exchange controls are an important consideration, the black-market rate—prevailing at the start of the default.¹¹ When central banks exchange bank notes on unfavourable terms, we use the amounts outstanding reported by the IMF closest to the exchange date. 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.

⁸ 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.

⁹ As a result, we do not include values for sovereign bond repudiations prior to 1960, e.g., Russia (1918) and China (1949).

¹⁰ For sovereigns that are members of monetary unions, we consider debt denominated in the common currency to be foreign currency for purposes of this analysis. Empirically, their default dynamics are like defaults on foreign currency-denominated debt by sovereigns outside monetary unions.

¹¹ In the few cases involving confiscatory currency reforms where central bank data are unavailable, we develop estimates based on the ratio of currency to GDP in countries with comparable GDP per capita. We note these cases in the Appendix.

Domestic arrears. This category refers to overdue domestic payments for legally mandated or contractually required government expenditures—including pensions, salaries, other services and capital outlays. The time frame in which late payments become arrears is typically governed by local law, most often after 30, 60 or 90 days. Our principal sources are the IMF, central banks and governments. An issue with domestic arrears is that they are usually compiled on a flow rather than a stock basis, and they are often revised. To develop stock estimates comparable with conventional sovereign defaults, we rely on the most recently reported flow data and add or subtract data to derive stock estimates for earlier or later years. These annual amounts, in turn, are converted into US dollars at year-end exchange rates. This data series is still being compiled and is most comprehensive globally for the 2000–2021 period.

Summary data. In this section of the BoC–BoE database, we aggregate the country-by-country data for sovereign defaults in global totals. The data on the total number of sovereign issuers are the authors’ estimates. We tabulate data on the number of sovereigns in default based on the total number, excluding domestic arrears, in the database for each year. The number of sovereigns we have so far identified with domestic arrears in each year is shown separately. The global total nominal US-dollar amounts for Paris Club, China, other official creditor and private creditor categories in 2021 are the authors’ estimates. The categories for data on sovereign defaults by debtor are based on IMF definitions for advanced economies (5 sovereigns in the database) and for heavily indebted poor countries (39), and on the J.P. Morgan Emerging Market Bond Index Global Diversified Index definitions for emerging- and frontier-market sovereigns (51). The other developing countries group (55) includes all other sovereigns in the database.

Our compilation of the country data covers 157 sovereigns (including sovereigns with identified domestic arrears only) in the database. It includes:

- The aggregate value of Paris Club lending
- Chinese official lending
- World public debt
- Emerging-market and developing country GDP and world GDP

This data, sourced from the IMF World Economic Outlook (IMF 2022b, 2022c) and the World DataBank and the World Bank Group (2022), provides a global perspective on the scale of annual sovereign defaults from 1960 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:

- a) years in which default occurred
- b) types of debt in default
- c) characteristics of debt restructured (e.g., interest rate, original maturity)

d) 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 seven debt types—IMF, Paris Club, other official creditors, private creditors, foreign currency bank loans, foreign currency bonds and local currency debt—at various times over the 1960–2021 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 variable a. We are relatively more confident that we have identified all the types of debt involved in each case, so we score variable b at 2. We assign a score of 3 to variable c, which addresses our knowledge about the characteristics of the debt restructured, because we are less confident about our estimates of the value of debt restructured in the 1970s and 1980s than about debt restructured more recently. We find that the information from the different sources we consulted is reasonably consistent, but since external arrears owed to official creditors come from the World DataBank and are subject to revision, we assign a score of 3 to subcategory d. Finally, we average the results of the subcategories, resulting in an overall score of 3.

6. Conclusion

The BoC–BoE 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 datasets 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. These include bonds and other marketable securities, bank loans and official loans in default, valued in US dollars, from 1960 onwards on both a country-by-country and a global basis. In addition, we include separate data on sovereigns with domestic arrears, most comprehensively for the 2000–2021 period. 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 used sources we consider reliable, our database of sovereign defaults may not be exhaustive. As additional information on defaults becomes available, it will be incorporated in future database updates.

Appendix

Below are the sources we use to compile the BoC–BoE database.

Global aggregates

International Financial Statistics (IMF various years), IMF (2013a, 2022a, 2022b), J.P. Morgan (2022), Lazard (2015), Mbaye, Badia and Chae (2018), Paris Club (2022a), World Bank Group, including IBRD and IDA (1980–2022), World DataBank.

1. Afghanistan (data reliability score: 4)

AidData (2017), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF annual reports (1997–2002), IMF staff reports (1965–2022) IMF (2016), Paris Club (2022a), World Bank Financial Statement (2000), World Bank Group (2022), World DataBank and IMF DataMapper via Haver. Note: World DataBank data on debt owed to other official creditors are not available prior to 1993 and for private creditors prior to 1992. Data on other official creditors in earlier years are based on IMF staff reports.

2. Albania (data reliability score: 3)

Das, Papaioannou and Trebesch (2012), Tellimer (2019), Flynn and Pessoa (2014), IMF staff reports (2019–2022), Paris Club (2022a), World Bank Group (2012), World DataBank and IMF DataMapper via Haver.

3. Algeria (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF staff reports (2019–2022), Tellimer (2019), Lund (2019), Paris Club (2021a), World DataBank and IMF DataMapper.

4. Angola (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Dreher, Fuchs, Parks, Strange and Tierney (2017), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), International Financial Statistics (IMF various years), IMF (2016), IMF staff reports (1993–2022), Kiala (2010), Kratz, Feng and Wright (2019), Linzmayer (2016), Paris Club (2022a), Paulson (1999), Tellimer (2019), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Angola's 1990 local currency default was the result of a confiscatory currency reform.

5. Antigua and Barbuda (data reliability score: 3)

Das, Papaioannou and Trebesch (2012), Durant (2012), Eastern Caribbean Central Bank annual reports (2015–2021), IMF (2013e), IMF Article IV staff reports (2004–2022), Montcrief-Scott (2011), Paris Club (2022a), Schipke, Cebotari and Thacker (2013), IMF DataMapper.

6. Argentina (data reliability score: 3)

Argentina, Republic of (2016, 2020), authors' conversations with IMF staff, Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), IMF staff reports

(1961–1966, 2019–2022), Mander (2016), Paris Club (2022a), Squires (2019), Sturzenegger and Zettelmeyer (2005), Tellimer (2019), US SEC financial statements (2003, 2006, 2011, 2021), World DataBank and IMF DataMapper, World Development Report (1983).

7. Armenia (data reliability score: 4)

IMF staff reports (2000–2022), World DataBank and IMF DataMapper.

8. Azerbaijan (data reliability score: 4)

IMF staff reports (1998–2022), Tellimer (2019), World DataBank and IMF DataMapper.

9. Bahamas (data reliability score: 3)

IMF staff reports (2000–2022).

10. Bangladesh (data reliability score: 4)

AidData (2017), IMF staff reports (2019–2022), World DataBank and IMF DataMapper.

11. Barbados (data reliability score: 2)

Barbados *Advocate* (2019), Culverhouse (2019), IMF staff reports (2000–2022), World DataBank and IMF DataMapper.

12. Belarus (data reliability score: 4)

IMF staff reports (2000–2022), World DataBank and IMF DataMapper.

13. Belize (data reliability score: 3)

Beers and Chambers (2006), Cruces and Trebesch (2011), Durant (2012), IMF staff reports (2014–2022), Schipke, Cebotari and Thacker (2013), Tellimer (2019), World DataBank and IMF DataMapper.

14. Benin (data reliability score: 4)

AidData (2017), Das, Papaioannou and Trebesch (2012), IMF (2016), IMF staff reports (1961–2022), Paris Club (2022a), World DataBank and IMF DataMapper.

15. Bhutan (data reliability score: 4)

World DataBank and IMF DataMapper.

16. Bolivia (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Bittermann (1973), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), FBPC (1970), IMF (2016), IMF staff reports (1961–1967, 2001–2022), Paris Club (2022b), World Bank Group (2012), World DataBank and IMF DataMapper.

17. Bosnia and Herzegovina (data reliability score: 2)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF Annual Reports (1993–1995), IMF staff reports (1999–2022), Paris Club (2022b), Stanič (2001), Tellimer (2019), World DataBank and IMF DataMapper.

18. Botswana (data reliability score: 3)

Kratz, Feng and Wright (2019), World DataBank and IMF DataMapper.

19. Brazil (data reliability score: 3)

Beers and Chambers (2006), Bittermann (1973), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF staff reports (1961–1966), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

20. Bulgaria (data reliability score: 3)

Cruces and Trebesch (2011), CCFB (1987), Das, Papaioannou and Trebesch (2012), FBPC (1987), Paris Club (2022b), World DataBank and IMF DataMapper.

21. Burkina Faso (data reliability score: 4)

Das, Papaioannou and Trebesch (2012), IMF (2016), IMF staff reports (2000–2022), Paris Club (2022b), World DataBank and IMF DataMapper.

22. Burundi (data reliability score: 4)

AidData (2017), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (1999–2022), Paris Club (2022b), Beers and Chambers (2006), World Bank Group (2021), World DataBank and IMF DataMapper.

23. Cabo Verde (data reliability score: 4)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), IMF staff reports (1999–2022), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Local currency debt in default in 1999–2001 reflects interest arrears and the conversion of some instruments into longer-term low-interest foreign currency debt financed by external donors.

24. Cambodia (data reliability score: 3)

AidData (2017), Boughton (2001), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF Annual Reports (1978–1993), IMF staff reports (1972–1991), IMF (2013a), Kratz, Feng and Wright (2019), Paris Club (2022b), Prasso (2001), Rathavong (2018), World Bank Group (2012), World DataBank and IMF DataMapper, Yun (2010). Note: The 1975 local currency default was the result of the Pol Pot regime's abolition of money. As central bank records are not available, we used currency data for Laos, with comparable per capita US-dollar GDP in 1975, to calculate a proxy value for Cambodian defaulted currency.

25. Cameroon (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), IMF (2016, 2017), IMF staff reports (1999–2022), Paris Club (2019), World Bank Group (2012, 2021), World DataBank and IMF DataMapper. Note: Other official creditor data in 2017 include US\$1,057 million of debt restructured by Banque des États de l'Afrique Centrale (BEAC), the central bank of the common currency area.

26. Central African Republic (data reliability score: 4)

AidData (2017), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), IMF (2016, 2017), IMF staff reports (2000–2021), Paris Club (2022b), Rieffel (1985), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Other official creditor data in 2017 include US\$147 million of debt restructured by Banque des États de l'Afrique Centrale (BEAC), the central bank of the common currency area.

27. Chad (data reliability score: 4)

AidData (2017), Boughton (2001), IMF Annual Report (1984), Hurley, Morris and Portelance (2018), IMF (2016, 2017), IMF staff reports (2000–2021), Paris Club (2022b), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Other official creditor data in 2017 include US\$722 million of debt restructured by Banque des États de l'Afrique Centrale (BEAC), the central bank of the common currency area.

28. Chile (data reliability score: 2)

Beers and Chambers (2006), Bittermann (1973), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Article IV staff reports (1961–1976), Paris Club (2022b), World DataBank and IMF DataMapper.

29. Colombia (data reliability score: 4)

IMF staff reports (2016–2022), World DataBank and IMF DataMapper.

30. Comoros (data reliability score: 3)

AidData (2017), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (2000–2022), Paris Club (2022b), World Bank Group financial statement (2000), World DataBank and IMF DataMapper.

31. The Republic of the Congo (Brazzaville) (data reliability score: 3)

AidData (2017), Bavier (2019), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (2000–2022), Paris Club (2022b), Raynaud (2017), Tellimer (2019), Wallace (2016), World Bank Group financial statements (2000–2001), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Other official creditor data in 2017 include US\$1,048 million of debt restructured by Banque des États de l'Afrique Centrale (BEAC), the central bank of the common currency area.

32. Democratic Republic of the Congo (Kinshasa) (data reliability score: 3)

AidData (2017), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), FBPC (1965), Hurley, Morris and Portelance (2018), IMF annual reports (1988–1989, 1992–2002), IMF staff reports (2000–2022), IMF (2016), Paris Club (2022b), Rieffel (1985), World Bank Group financial statements (2000–2002), World DataBank via Haver, World Bank Group World Development Report (1983). Note: The 1979 local currency default was the result of a confiscatory currency reform.

33. Cook Islands (data reliability score: 2)

AsDB SDBS (2021), AsDB Asian Development Outlook (1994–2021), Beers and Chambers (2006).

34. Costa Rica (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Article IV staff reports (1962–1970), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

35. Côte d'Ivoire (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Dosso (2019), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), IMF (2012, 2016), IMF staff reports (2000–2022), Paris Club (2022b), Tellimer (2019), World Bank Group (2012), World Bank Group financial statements (2001, 2005–2008), World DataBank and IMF DataMapper. Note: Foreign currency bond data in 2011–2012 include the restructuring of domestic law treasury bills denominated in CFA francs, the common currency of the West African Economic and Monetary Union.

36. Croatia (data reliability score: 1)

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), IMF DataMapper.

37. Cuba (data reliability score: 4)

Acosta and Frank (2019, AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Economist Intelligence Unit (2017), FBPC (1962), Hurley, Morris and Portelance (2018), IMF staff reports (1961), International Financial Statistics (IMF various years), LeoGrande (2016), Kratz, Feng and Wright (2019), Paris Club (2022b), Rieffel (1985) Tellimer (2019). Note: Cuba's 1961 local currency default was the result of a confiscatory currency reform. Cuba's foreign currency bonds defaulted in 1960–1961 when they were repudiated by the government. We have revised values for defaulted Paris Club debt in 1986–2014 to reflect interest arrears restructured in the 2015 agreement. We have also revised the value of bank loans in default between 1985 and 2021 to reflect additional information on their terms.

38. Curaçao (data reliability score: 4)

Centrale Bank van Curaçao en Sint Maarten (1983, 2000–2021).

39. Cyprus (data reliability score: 1)

European Commission (2013a), IMF (2013c), IMF DataMapper, IMF staff reports (2012–2021).

40. Czechoslovakia (data reliability score: 2)

CCFB (1986), FBPC (1986).

41. Djibouti (data reliability score: 4)

Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF staff reports (1999–2021), Paris Club (2022b), World Bank Group (2021), World DataBank and IMF DataMapper.

42. Dominica (data reliability score: 3)

Cruces and Trebesch (2011), Dominica NewsOnline (2017), Durant (2012), Eastern Caribbean Central Bank annual reports (2015–2020), IMF (2004), IMF staff reports (2013–2018), Schipke, Cebotari and Thacker (2013), World Bank Group (2021), World DataBank and IMF DataMapper.

43. Dominican Republic (data reliability score: 3)

Beers and Chambers (2006), Bittermann (1973), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), IMF staff reports (1961–1970, 2013–2021), Schipke, Cebotari and Thacker (2013), Tellimer (2019), World DataBank and IMF DataMapper.

44. Ecuador (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF staff reports (1998–2021), Kratz, Feng and Wright (2019), Paris Club (2022b), Sturzenegger and Zettelmeyer (2005), World DataBank and IMF DataMapper.

45. Egypt (data reliability score: 4)

Bornschiefer, Pfister and Suter (1986), Das, Papaioannou and Trebesch (2012), IMF staff reports (1967–1969), Malik (1990), *New York Times* (1987), Paris Club (2022b), Walters (1970), World DataBank and IMF DataMapper.

46. El Salvador (data reliability score: 3)

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Francis (2017), Paris Club (2022b), World DataBank and IMF DataMapper.

47. Equatorial Guinea (data reliability score: 4)

AidData (2017), Hurley, Morris and Portelance (2018), IMF staff reports (1995–2021), IMF (2017), Paris Club (2022b), World DataBank and IMF DataMapper. Note: Other official creditor data in 2017 include US\$949 million of debt restructured by Banque des États de l'Afrique Centrale (BEAC), the central bank of the common currency area.

48. Eritrea (data reliability score: 4)

AidData (2017), Hurley, Morris and Portelance (2018), World Bank Group financial statements (2012–2021), World DataBank and IMF DataMapper.

49. Ethiopia (data reliability score: 4)

Addis Standard (2019), AidData (2017), Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), IMF (2016), Paris Club (2022b), World Bank Group (2012, 2021), World DataBank and IMF DataMapper.

50. Fiji (data reliability score: 4)

World Bank Group (2021), World DataBank, and IMF DataMapper.

51. Gabon (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF (2013d, 2017), IMF staff reports (1995–2021), Paris Club (2022b), Rieffel (1985), Tellimer (2019), World DataBank and IMF DataMapper. Note: Other official creditor data in 2017 include US\$829 million of debt restructured by Banque des États de l'Afrique Centrale (BEAC), the central bank of the common currency area.

52. The Gambia (data reliability score: 3)

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF annual reports (1985–1986), IMF (2016), IMF staff reports (1995–2021), Paris Club (2022b), World Bank Group (2021), World DataBank and IMF DataMapper.

53. Georgia (data reliability score: 3)

AidData (2017), Authors' conversations with National Bank of Georgia staff (2015), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), IMF staff reports (1995–2021), Paris Club (2022b), World DataBank and IMF DataMapper.

54. Ghana (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Bornschier, Pfister and Suter (1986), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), IMF (2016), IMF staff reports (1968–1970, 1998–2021), International Financial Statistics (IMF various years), Krassowski (2014), Linzmayer (2016), Mas (1995), Paris Club (2022b), Suter (1986), Tellimer (2019), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Ghana's local currency defaults in 1979 and 1982 were the result of confiscatory currency reforms.

55. Greece (data reliability score: 1)

FBPC (1965), Flynn and Pessoa (2014), IMF (2013b, 2013d, 2015a), IMF staff reports (2010–2021), Khan and Brunsden (2018), Spink (2018), Zettelmeyer, Trebesch and Gulati (2013), IMF DataMapper.

56. Grenada (data reliability score: 3)

Asonuma, Li and Papaioannou (2017), Beers and Chambers (2006), Bloomberg (2016), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), Eastern Caribbean Central Bank

Annual Reports (2015–2020), IMF (2013d), IMF staff reports (2008–2021), Paris Club (2022b), Schipke, Cebotari and Thacker (2013), World Bank Group (2021), World DataBank and IMF DataMapper.

57. Guatemala (data reliability score: 3)

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), Tellimer (2019), World DataBank and IMF DataMapper.

58. Guinea (data reliability score: 4)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF Article IV staff reports (1966–1970, 1993–2021), Paris Club (2022b), World Bank Group (2012), World DataBank and IMF DataMapper.

59. Guinea-Bissau (data reliability score: 4)

AidData (2017), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF staff reports (1999–2021), Paris Club (2022b), IMF (2016), World Bank Group (2021), World DataBank and IMF DataMapper.

60. Guyana (data reliability score: 3)

AidData (2017), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1984–1990), Hurley, Morris and Portelance (2018), IMF (2016), Paris Club (2022b), World Bank Group (2012), World DataBank and IMF DataMapper, World Bank Group World Development Report (1983).

61. Haiti (data reliability score: 3)

Boughton (2001), Das, Papaioannou and Trebesch (2012), IMF annual reports (1988–1989, 1993–1994), IMF staff reports (1961–1970, 1999–2021), IMF (2016), Paris Club (2022b), World Bank Group financial statement (2004), World Bank Group (2021), World DataBank and IMF DataMapper.

62. Honduras (data reliability score: 3)

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IDB (2019), IMF annual reports (1988–1990), IMF (2016), IMF staff reports (2000–2021), Paris Club (2022b), World Bank Group (2012), World DataBank and IMF DataMapper.

63. Hungary (data reliability score: 2)

CCBC (1976), FBPC (1976), World DataBank and IMF DataMapper.

64. India (data reliability score: 3)

Anthony (1998), Bornschier, Pfister and Suter (1986), Suter (1986), World DataBank and IMF DataMapper, World Bank Group World Development Report (1983).

65. Indonesia (data reliability score: 3)

Beers and Chambers (2006), Das, Papaioannou and Trebesch (2012), IMF staff reports (1966–1970), Paris Club (2022b), World DataBank and IMF DataMapper.

66. Iran (data reliability score: 4)

IMF staff reports (1999–2021), Rieffel (2003), Suter (1992), World Bank Group (2013), World DataBank and IMF DataMapper.

67. Iraq (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Ghabra (1991), Hinrichsen (2019), Hurley, Morris and Portelance (2018), International Financial Statistics (IMF various years), IMF annual reports (1992–2003), IMF (2013a), IMF staff reports (2004–2021), King (2004), Paris Club (2022b), Tellimer (2019), World Bank Group financial statements (2001–2003, 2005), World DataBank and IMF DataMapper. Note: World DataBank data on debt owed to other official creditors are not available prior to 2002. The 1990 local currency default stemmed from the actions of Iraq, then the occupying power in Kuwait, in converting Kuwaiti currency to Iraqi currency on confiscatory terms. The 1993 local currency default was the result of a confiscatory currency reform.

68. Ireland (data reliability score: 1)

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

69. Jamaica (data reliability score: 3)

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), Grigorian, Alleyne and Guerson (2012), IMF annual reports (1986–1987), IMF staff reports (1999–2021), Paris Club (2022b), Rieffel (1985), Schipke, Cebotari and Thacker (2013), Tellimer (2019), World DataBank and IMF DataMapper. Note: Other official creditor arrears in recent years reflect funds paid into escrow where settlement is blocked under applicable international and/or bilateral sanctions.

70. Jordan (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF staff reports (1999–2021), Paris Club (2022b), World DataBank and IMF DataMapper.

71. Kazakhstan (data reliability score: 4)

IMF staff reports (1994–2021), World DataBank and IMF DataMapper.

72. Kenya (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF staff reports (1997–2021), Paris Club (2022b), Tellimer (2019), World Bank Group (2021), World DataBank and IMF DataMapper.

73. Korea (North) (data reliability score: 4)

Alpert (2012), Haggard and Noland (2010), Hwang (2010), Linzmayer (2016), Paris Club (2022b), Tellimer (2019), Yang (2012), Yonhap (2017). Note: North Korea's local currency defaults in 1992 and 2009 were the result of confiscatory currency reforms. In the absence of central bank data, we utilize Hwang's assumption that currency in circulation amounted to 2% of estimated GDP.

74. Kosovo (data reliability score: 3)

IMF staff reports (2009–2021).

75. Kyrgyz Republic (data reliability score: 4)

AidData (2017), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF staff reports (1995–2021), Paris Club (2022b), Reuters (2012a), World DataBank and IMF DataMapper.

76. Laos (data reliability score: 4)

AidData (2017), International Financial Statistics (IMF various years), Hurley, Morris and Portelance (2018), IMF staff reports (1979, 2004–2021), World Bank Group (2021), World DataBank and IMF DataMapper. Note: Laos's 1976 local currency default was the result of a confiscatory currency reform.

77. Latvia (data reliability score: 3)

IMF staff report (2010).

78. Lebanon (data reliability score: 4)

Iradian (2019), IMF staff reports (2000–2021), World DataBank and IMF DataMapper.

79. Lesotho (data reliability score: 4)

AidData (2017), Hurley, Morris and Portelance (2018), IMF staff reports (1996–2021), Kratz, Feng and Wright (2019), World DataBank and IMF DataMapper.

80. Liberia (data reliability score: 3)

AidData (2017), Boughton (2001), Bittermann (1973), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF annual reports (1985–2008), IMF staff reports (1964, 1969–1970, 1999–2021), IMF (2016b), Paris Club (2022b), World Bank Group (2012), World Bank Group financial statements (2000–2008), World DataBank and IMF DataMapper.

81. Libya (data reliability score: 4)

African Development Bank Group (2019), IMF staff report (2005), Shchedrov (2008).

82. North Macedonia (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), Stanič (2001), Tellimer (2019), World DataBank and IMF DataMapper.

83. Madagascar (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), *The Economist* (2002), Hurley, Morris and Portelance (2018), International Financial Statistics (IMF various years), IMF (2005, 2016), IMF staff reports (1999–2021), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

84. Malawi (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), IMF (2016), IMF staff reports (1999–2021, Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

85. Maldives (data reliability score: 4)

IMF staff reports (2000–2021), World Bank Group (2021), World DataBank and IMF DataMapper.

86. Mali (data reliability score: 3)

Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF staff reports (1965–1979, 2000–2021), IMF (2016), Paris Club (2022b), World DataBank and IMF DataMapper.

87. Mauritania (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (2000–2021), Paris Club (2022b), World Bank Group (2012, 2021), World DataBank and IMF DataMapper.

88. Mauritius (data reliability score: 4)

IMF (2019), World DataBank and IMF DataMapper.

89. Mexico (data reliability score: 3)

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

90. Moldova (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF staff reports (1995–2021), Paris Club (2022b), World DataBank and IMF DataMapper.

91. Mongolia (data reliability score: 4)

AidData (2017), Beers and Chambers (2006), IMF staff reports (1995–2021), Kratz, Feng and Wright (2019), Tellimer (2019), World DataBank and IMF DataMapper.

92. Montenegro (data reliability score: 3)

IMF staff reports (2000–2021), World DataBank and IMF DataMapper.

93. Morocco (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF staff reports (1995–2021), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

94. Mozambique (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), IMF (2016), IMF staff reports (2000–2021), Kroll (2017), Paris Club (2022b), Rieffel (1985), World Bank Group (2012, 2021), World DataBank and IMF DataMapper. Note: The 1980 local currency default was the result of a confiscatory currency reform.

95. Myanmar (data reliability score: 4)

AidData (2017), Hurley, Morris and Portelance (2018), International Financial Statistics (IMF various years), Linzmayer (2016), Mas (1995), Paris Club (2022b), World Bank Group financial statements (2000, 2004, 2008–2009), World DataBank and IMF DataMapper. Note: The 1964, 1985 and 1987 local currency defaults were the result of confiscatory currency reforms.

96. Namibia (data reliability score: 4)

IMF staff reports (1990–2021).

97. Nauru (data reliability score: 2)

Asian Development Bank (AsDB) Annual Reports (2001–2008), Firebird Global Master Fund II Ltd. v. Republic of Nauru (2012), IMF staff reports (2006–2021), Mellor (2014) Pacific Islands Report (2003), IMF DataMapper.

98. Nepal (data reliability score: 4)

World DataBank and IMF DataMapper.

99. Nicaragua (data reliability score: 3)

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF annual reports (1984–1985), IDB (2019), International Financial Statistics (IMF various years), IMF (2007, 2016), IMF staff reports (1998–2021), Mas (1995), Paris Club (2022b), Tellimer (2019), World Bank Group (2012), World DataBank and IMF DataMapper. Note: Nicaragua's 1988 local currency default was the result of a confiscatory currency reform.

100. Niger (data reliability score: 4)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (1997–2021), Paris Club (2022b), World Bank Group (2012), World DataBank and IMF DataMapper.

101. Nigeria (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), International Financial Statistics (IMF various years), IMF staff reports (1998–2021), Mas (1995), Paris Club (2022b), Rieffel (2003), World DataBank and IMF DataMapper. Note: Nigeria's local currency defaults in 1967 and 1984 were the result of confiscatory currency reforms.

102. Pakistan (data reliability score: 2)

AidData (2017), Bittermann (1973), Cruces and Trebesch (2011), Development Reimagined (2019), Das, Papaioannou and Trebesch (2012), IMF staff reports (1961, 1998–2021), Paris Club (2022b), Sturzenegger and Zettelmeyer (2005), World DataBank and IMF DataMapper.

103. Palau (data reliability score: 4)

IMF staff reports (2000–2021).

104. Panama (data reliability score: 2)

Beers and Chambers (2006), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IDB (2019), IMF annual reports (1988–1992), IMF (2013a), IMF staff reports (1988–2021), Paris Club (2022b), World DataBank and IMF DataMapper.

105. Papua New Guinea (data reliability score: 4)

IMF staff reports 1999–2021), World Bank Group (2021), World DataBank and IMF DataMapper.

106. Paraguay (data reliability score: 3)

Beers and Chambers (2006), Cruces and Trebesch (2011), World DataBank and IMF DataMapper.

107. Peru (data reliability score: 3)

Bittermann (1973), Bornschiefer, Pfister and Suter (1986), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Duggar and Leos (2015), IMF Annual Reports (1985–93), IMF Article IV staff reports (1969–71), IDB (2019), IMF (2013a), Paris Club (2022b), Schipani and Wigglesworth (2015), World DataBank and IMF DataMapper, World Bank Group World Development Report (1983). Note: Local currency debt refers to domestic bonds that have been in default since the 1980s. Estimated amounts reflect an original face value of US\$343 million (as cited by Duggar and Leos [2015]) that over time has been impaired by exchange rate depreciation. The government acknowledges this debt, but amounts owing are in dispute with creditors and subject to domestic and foreign litigation.

108. Philippines (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper, World Bank Group World Development Report (1981).

109. Poland (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Diwan and Saldanha (1991), FBPC (1976), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

110. Portugal (data reliability score: 1)

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

111. Puerto Rico (data reliability score: 1)

Chari, Leary and Phan (2018), Commonwealth of Puerto Rico (2016, 2017), Hitchcock, Petek and Aldrete-Sanchez (2015), Kaske and Sivaloganathan (2016), Kaske and Wyss (2022), IMF DataMapper. Note: Bonds in default refer to “tax-supported” obligations, meaning that they are a claim on government tax revenues or are government-guaranteed obligations.

112. Romania (data reliability score: 3)

Boughton (2001), Cruces and Trebesch (2011), CCFB (1976), Das, Papaioannou and Trebesch (2012), Diwan and Saldanha (1991), Flynn and Pessoa (2014), FBPC (1979), IMF annual report (1986), IMF (2013a), Paris Club (2022b), Rieffel (1985), World DataBank and IMF DataMapper.

113. Rwanda (data reliability score: 3)

AidData (2017), Das, Papaioannou and Trebesch (2012), International Financial Statistics (IMF various years), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (1994–2021), Mas (1995), Paris Club (2022b), World DataBank and IMF DataMapper. Note: The 1995 local currency default was the result of a confiscatory currency reform.

114. St. Kitts and Nevis (data reliability score: 3)

Durant (2012), Eastern Caribbean Central Bank annual reports (2015–2021), IMF staff reports (2010–2021), Paris Club (2022b), Schipke, Cebotari and Thacker (2013), World DataBank and IMF DataMapper.

115. St. Lucia (data reliability score: 4)

Eastern Caribbean Central Bank annual reports (2015–2021), World Bank Group (2021), World DataBank and IMF DataMapper.

116. St. Vincent and the Grenadines (data reliability score: 4)

Eastern Caribbean Central Bank annual reports (2015–2021), IMF staff reports (2008–2021), World Bank Group (2021), World DataBank and IMF DataMapper.

117. Samoa (data reliability score: 3)

AidData (2017), Hurley, Morris and Portelance (2018), World Bank Group financial statement (2007), World Bank Group (2021), World DataBank and IMF DataMapper.

118. São Tomé and Príncipe (data reliability score: 3)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2016), IMF staff reports (1992–2021), Paris Club (2022b), World Bank Group (2012, 2021), World DataBank and IMF DataMapper.

119. Senegal (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (1998–2021), Paris Club (2022b), Tellimer (2019), World Bank Group (2012), World DataBank and IMF DataMapper.

120. Serbia (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Tellimer (2019), Hurley, Morris and Portelance (2018), IMF annual reports (1993–2000), IMF staff reports (2000–2021), Paris Club (2022b), Stanič (2001), Tellimer (2019), World Bank Group financial statements (2001, 2006), World DataBank and IMF DataMapper. Note: The other official creditor category includes an unpaid US\$48 million loan from Libya, originally made to Yugoslavia in 1981, that has not yet been resolved.

121. Seychelles (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), IMF (2013d), Paris Club (2022b), Schipke, Cebotari and Thacker (2013), Tellimer (2019), World Bank Group financial statements (2003–2007), World DataBank and IMF DataMapper.

122. Sierra Leone (data reliability score: 4)

AidData (2017), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF annual reports (1985–1994), IMF (2016), IMF staff reports (1989–2021), Paris Club (2022b), Rieffel (1985), World Bank Group (2012, 2021), World DataBank and IMF DataMapper.

123. Sint Maarten (data reliability score: 4)

Centrale Bank van Curaçao en Sint Maarten (1983, 2000–2021).

124. Slovenia (data reliability score: 1)

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

125. Solomon Islands (data reliability score: 4)

AsDB SDBS (2020), International Financial Statistics (IMF various years), IMF Article IV staff reports (1998–2021), World DataBank and IMF DataMapper.

126. Somalia (data reliability score: 3)

AidData (2017), Boughton (2001), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF annual reports (1985–2017), IMF (2013a), IMF (2016), IMF staff reports (2012–2021), Paris Club (2022b), World Bank Group financial statements (1992–2020), World DataBank and IMF DataMapper.

127. South Africa (data reliability score: 2)

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

128. South Sudan (data reliability score: 4)

Dumo (2017), IMF staff reports (2012–2021), IMF DataMapper, World Bank Group (2021).

129. Sri Lanka (data reliability score: 3)

CBSL (1996), Das, Papaioannou and Trebesch (2012), International Financial Statistics (IMF various years), IMF staff reports (2000–2021), Kratz, Feng and Wright (2019), Paris Club (2022b), World DataBank and IMF DataMapper. Note: The 1996 local currency default reflects the suspension of treasury bill auctions and rollover of maturing debt between January and March after the central bank was severely damaged by a terrorist bomb.

130. Sudan (data reliability score: 4)

AidData (2017), Alden and Jiang (2019), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), International Financial Statistics (IMF various years), IMF annual reports (1984–2017), IMF (2013d, 2016), IMF staff reports 1999–2021, Mas (1995), Paris Club (2022b), Rieffel (1985), Reuters (2012b), Tellimer (2019), World Bank Group financial statements (1994–2020), World DataBank and IMF DataMapper. Note: Sudan's local currency default in 1991 was the result of a confiscatory currency reform.

131. Suriname (data reliability score: 4)

Beers and Chambers (2006), IDB (2019), IMF staff reports (1998–2021), World DataBank and IMF DataMapper.

132. eSwatini (Swaziland) (data reliability score: 4)

IMF staff reports (1998–2021), World DataBank and IMF DataMapper.

133. Syria (data reliability score: 4)

Associated Press (2005), *Budapest Business Journal* (2008), IMF staff reports (1965, 2006, 2009), Paris Club (2022b), World Bank Group financial statements (2001, 2002, 2012–2021), World DataBank and IMF DataMapper. Note: Except for the IBRD and IDA, official creditor data is unavailable before 1995 and, apart from Russia's debt write-off in 2005, for 2002–2007.

134. Tajikistan (data reliability score: 4)

IMF staff reports (1995–2021), World Bank Group (2021), World DataBank and IMF DataMapper.

135. Tanzania (data reliability score: 4)

AidData (2017), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF annual reports (1985–1986), IMF (2016), IMF staff reports (1998–2021), Paris Club (2022b), Tellimer (2019), World Bank Group (2012), World DataBank and IMF DataMapper.

136. Thailand (data reliability score: 3)

World DataBank and IMF DataMapper.

137. Togo (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (1996–2021), Paris Club (2022b), Rieffel (1985), World Bank Group financial statements (2004, 2008), World Bank Group (2012), World DataBank and IMF DataMapper, World Development Report (1983).

138. Tonga (data reliability score: 4)

AidData (2017), Fonua (2013), Greenfield (2018), IMF staff reports (2015, 2017, 2020), World Bank Group (2021), World DataBank and IMF DataMapper.

139. Trinidad and Tobago (data reliability score: 1)

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2022b), IMF DataMapper.

140. Tunisia (data reliability score: 4)

IMF staff reports (1996–2021), World DataBank and IMF DataMapper.

141. Turkey (data reliability score: 3)

Bornschiefer, Pfister and Suter (1986), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Ferris (2011), International Financial Statistics (IMF various years), IMF staff reports (1966, 2000–2021), Paris Club (2022b), Rieffel (1985), Tudela (2011), World DataBank and IMF DataMapper. Note: Turkey's 1999 local currency debt default reflected the imposition of a withholding tax targeting government securities issued prior to December of that year.

142. Turkmenistan (data reliability score: 4)

IMF staff reports (1995–1999) World DataBank and IMF DataMapper.

143. Tuvalu (data reliability score: 4)

IMF staff reports (2017–2021).

144. Uganda (data reliability score: 3)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Flynn and Pessoa (2014), Hurley, Morris and Portelance (2018), IMF (2016), IMF staff reports (1996–2021), Paris Club (2022b), Rieffel (1985), Tellimer (2019), World Bank Group (2012), World DataBank and IMF DataMapper.

145. Ukraine (data reliability score: 3)

AidData (2017), Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2015b), IMF staff reports (1995–2021), Kratz, Feng and Wright (2019), Olearchyk (2015), Paris Club (2022b), Sturzenegger and Zettelmeyer (2005), Tellimer (2019), Ukraine (2014), World DataBank and IMF DataMapper.

146. United Kingdom (data reliability score: 1)

Reuters (2022).

147. Uruguay (data reliability score: 2)

Bittermann (1973), Cruces and Trebesch (2011), IMF staff reports (1966), Sturzenegger and Zettelmeyer (2005), IMF DataMapper.

148. USSR/Russian Federation (data reliability score: 3)

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Diwan and Saldanha (1991), Ferguson and Granville (2000), International Financial Statistics (IMF various years), IMF staff reports (1995–2021), Mas (1995), Paris Club (2022b), Shpakovsky (2013), Sturzenegger and Zettelmeyer (2005), World DataBank and IMF DataMapper. Note: The 1991 and 1993 local currency defaults were the result of confiscatory currency reforms.

149. Uzbekistan (data reliability score: 4)

IMF staff reports (1995–2021), World DataBank and IMF DataMapper.

150. Vanuatu (data reliability score: 4)

AidData (2017), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), Radio New Zealand (2018), World DataBank and IMF DataMapper.

151. Venezuela (data reliability score: 4)

Banco Central de Venezuela (2017), Beers and Chambers (2006), Castellano, Figueroa and Lanau (2019), Coughlin (2019), Cruces and Trebesch (2011), Culverhouse (2018), Foy, Rathbone and Allen (2017), Garip (2020), IDB (2019), International Financial Statistics (IMF various years), IMF staff reports (1980–1998), Martin (2017), Paraguassu (2017), Paris Club (2022b), S&P Global Ratings (2020), Tellimer (2019), Tudela (2011), World DataBank and IMF DataMapper. Note: Venezuela's 2016 local currency default was the result of a confiscatory currency reform.

152. Vietnam (data reliability score: 3)

Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), International Financial Statistics (IMF various years), IMF annual reports (1984–1993), IMF staff reports (1989–1990), Mas (1995), Paris Club (2022b), Tellimer (2019), World DataBank and IMF DataMapper. Note: Vietnam’s 1975 local currency default resulted from the conversion of South Vietnamese currency to North Vietnamese currency on confiscatory terms. The 1975, 1978 and 1985 local currency defaults were the result of confiscatory currency reforms. As central bank records are not available for 1978, we used currency data for Laos, with comparable per capita US-dollar GDP, to calculate a proxy value for converted Vietnamese currency.

153. West Bank and Gaza (data reliability score: 4)

IMF staff reports (2004–2021).

154. Yemen (data reliability score: 4)

AidData (2017), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), IMF staff reports (2009), Paris Club (2022b), World Bank Group (2012, 2021), World DataBank and IMF DataMapper.

155. Yugoslavia (data reliability score: 3)

Beers and Chambers (2006), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Fleming and Sertic (1962), IMF staff reports (1965–1969), Paris Club (2022b), Stanič (2001), OECD (1984/1985 to 2002), World DataBank via Haver. Note: The 1991 default on a foreign currency bond was an effective debt repudiation, as it was never assumed by Yugoslavia’s successor states.

156. Zambia (data reliability score: 3)

AidData (2017), Boughton (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Hurley, Morris and Portelance (2018), Kratz, Feng and Wright (2019), IMF annual reports (1985–1995), IMF (2016), IMF staff reports (1994–2021), Paris Club (2022b), Rieffel (1985), World Bank Group (2012, 2021), World DataBank and IMF DataMapper.

157. Zimbabwe (data reliability score: 3)

AidData (2017), Alden and Jiang (2019), CCFB (1981), Hurley, Morris and Portelance (2018), IMF annual reports (2001–2019), IMF staff reports (2000–2021), Kratz, Feng and Wright (2019), Makoshori (2015), Mambondiyani (2018), Paris Club (2022b), Republic of Zimbabwe (2015), RWR Belt and Road Monitor (2020), World Bank Group financial statements (2001–2021), World DataBank and IMF DataMapper. Note: The local currency default in 2001 reflected a unilateral extension of debt maturities. Foreign currency bonds in default since 2009 reflect obligations owed to mining companies by the Reserve Bank that were assumed by the government in 2015.

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