Introducing a New Database of Sovereign Defaults

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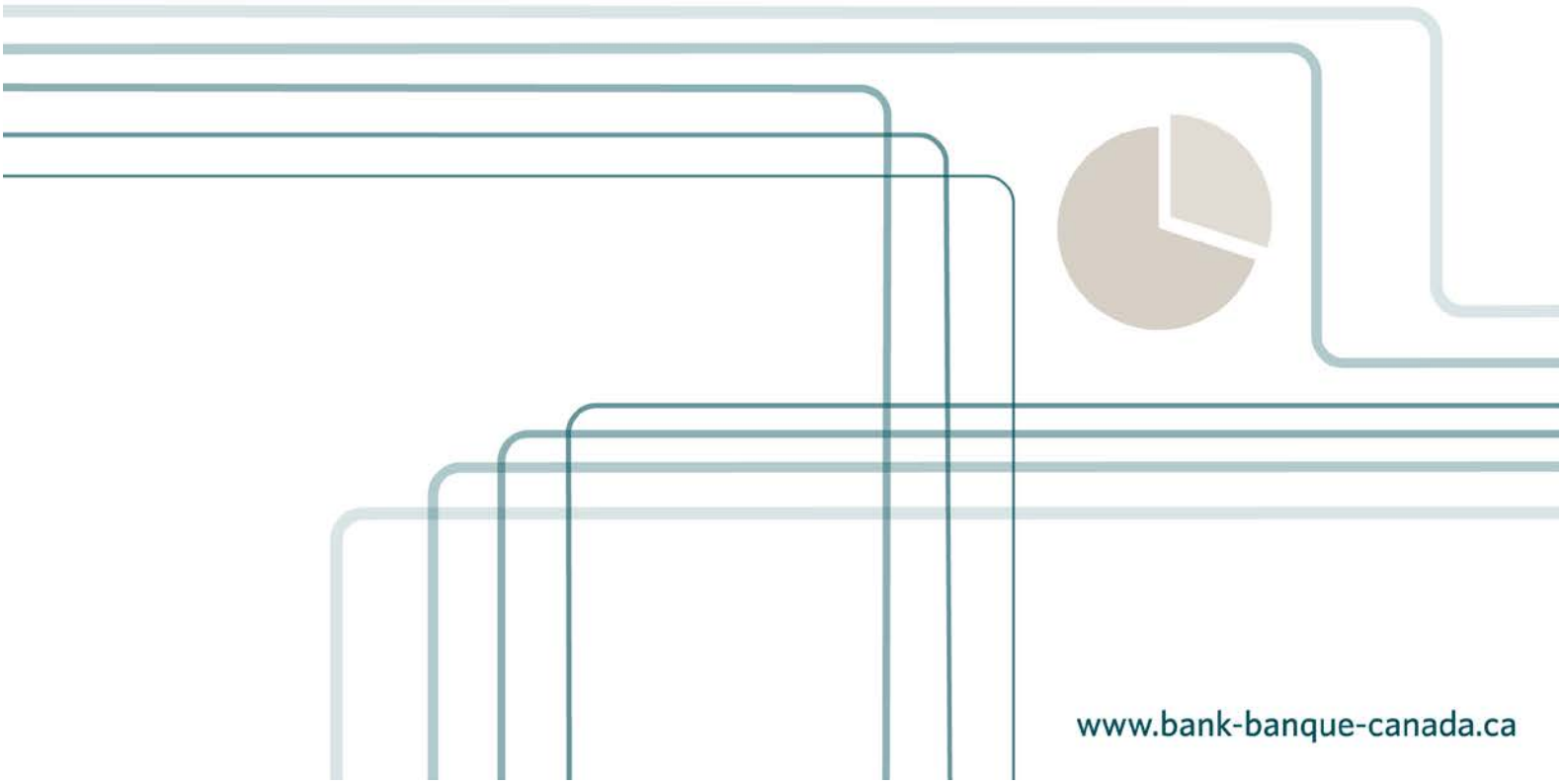
by David T. Beers and Jean-Sébastien Nadeau



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Introducing a New Database of Sovereign Defaults

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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 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 U.S. dollars, for the years 1975 to 2013 on both a country-by-country and a global basis. CRAG's new 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 maintenant, peu d'efforts ont été consacrés à l'évaluation systématique des différents types de défauts souverains ainsi qu'au calcul de la valeur nominale globale des engagements à payer que ceux-ci 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. 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 permettent d'estimer le montant total des prêts bancaires, des obligations et autres titres négociables, ainsi que des prêts officiels en situation de défaut, tous exprimés en dollars américains, pour la période allant de 1975 à 2013. Cette information est présentée à la fois sur une base désagrégée, c'est-à-dire pays par pays, et sur une base agrégée, c'est-à-dire à l'échelle mondiale. La nouvelle base de données du Groupe chargé de la notation du crédit, ainsi que 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 l'incidence sur la stabilité financière mondiale de la survenue 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 use 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 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 where actions by the sovereign result in effective economic losses by creditors.

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; or,
- conversion of central bank notes into new currency of less-than-equivalent face value.

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/2014/02/CRAG-Database-30-01-14.xlsx – tabulates data on debt owed to official and private creditors for all sovereign defaults that we have identified between the years

[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.

1975 and 2013.[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 U.S. 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.

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

- International Monetary Fund (IMF);
- official creditors;
- private creditors;
- 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 1975 to 2013:

- total debt in default (in nominal U.S. dollars);
- total debt in default by creditor type (in nominal U.S. dollars);
- number of sovereign governments;
- number of sovereign governments in default;
- global general government or public debt (in nominal U.S. dollars);
- global gross domestic product (in nominal U.S. dollars).

4. Data Sources and Data Estimation

To construct the CRAG database, we utilized data previously published by the Paris Club (2014); the International Monetary Fund (2013 and earlier years); the World Bank's World

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

DataBank (2014); 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, and IMF and official loans in default for the years 1975 through 2013. 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 U.S.-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. There are cases where such arrears have persisted for extended periods and, over the past decade, some IMF loans have been written off as part of the Heavily Indebted Poor Country (HIPC) initiative. 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. 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 U.S. dollars.

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 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 plan to publish data on defaulted loans of the largest MLIs in a future database update. In the meantime, they form one component of our proxy for official defaulted debt 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 1950–2010. They identify the year and the amounts of each restructuring of Paris Club debt, but do not estimate the annual amount of unpaid loans and accrued interest for the entire default period. Utilizing these restructuring data, information from the Paris Club website and other sources, we plan to publish country-by-country estimates of the amount of defaulted Paris Club debt in a future database update. In the meantime, Paris Club debt forms one component of our proxy for official debt amounts in default described below.

Official creditors. Currently, this category covers loans to governments from the MLIs, the Paris Club and other bilateral official creditors, including national export credit and development agencies. In most cases, our source for the country-by-country data is the World Bank's World DataBank, which reports annual amounts of unpaid interest and principal for this category of creditors.[3] To develop our proxy for annual amounts of official debt in default, we calculate the cumulative totals of annual loan arrears on a country-by-country basis from 1975 onwards. There are two main drawbacks with this approach. First, to some degree, the country totals will underestimate the actual value of official debt in default, because we make no allowance for the

[3] The World DataBank data on official creditors' arrears exclude arrears on IMF lending.

total loan amounts outstanding when payment defaults and/or debt restructuring occurred. Second, as highlighted by Cruces and Trebesch (2011), there may be errors in some of the country data the World Bank reports.[4] Despite these shortcomings, we believe that our proxy provides a reasonable approximation of the global amounts of official debt in default since 1975. Future work to develop separate estimates of the MLI and Paris Club components should contribute to a more robust official creditor data set overall.

Private creditors. This category refers to foreign currency-denominated lending to governments by foreign commercial creditors, including banks and suppliers. Our source for the country-by-country data is the World Bank's World DataBank, which reports annual amounts of unpaid interest and principal for this category of creditors. Because we calculate the cumulative totals of annual loan arrears from 1975 onwards, this data set has the same drawbacks as for the official creditor data taken from the same source. We utilize these data in cases where we do not have separate data on bank loans and bonds.

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 typically include a variable rate of interest 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 U.S. dollars.

[4] Cruces and Trebesch cite instances where data on debt restructurings from this source contained errors.

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.[5] Where defaulted bonds are denominated in another currency, we used applicable end-of-period exchange rates to convert amounts into U.S. dollars.

Local currency debt. This category refers to debt issued by a government in its own currency.[6] 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 derived from budgetary interest and principal arrears reported in IMF country reports, are provisional. The majority of these defaults tend to be resolved quickly. Where they persist, 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 unfavorable 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 U.S. dollars. Where a default has occurred but we have insufficient information to estimate the amount of debt involved, the database shows asterisks rather than values for the applicable year, and we record the default in the annual global total number of defaults.

[5] 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.

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

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 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 U.S.-dollar amounts for the official creditor and private creditor categories in 2013 are authors' estimates. Our roll-up of the country data, along with the data on public debt and global GDP sourced from the most recent IMF *World Economic Outlook*, provide a global perspective of the scale of annual sovereign defaults from 1975 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 five debt types – IMF lending, official creditors, foreign currency bank loans, foreign currency bonds and local currency debt – at various times over the 1975–2013 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

CRAG's new database and future updates will be helpful to researchers analyzing the economic and financial effects of sovereign defaults from 1975 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 bonds and other marketable securities.[7] 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.

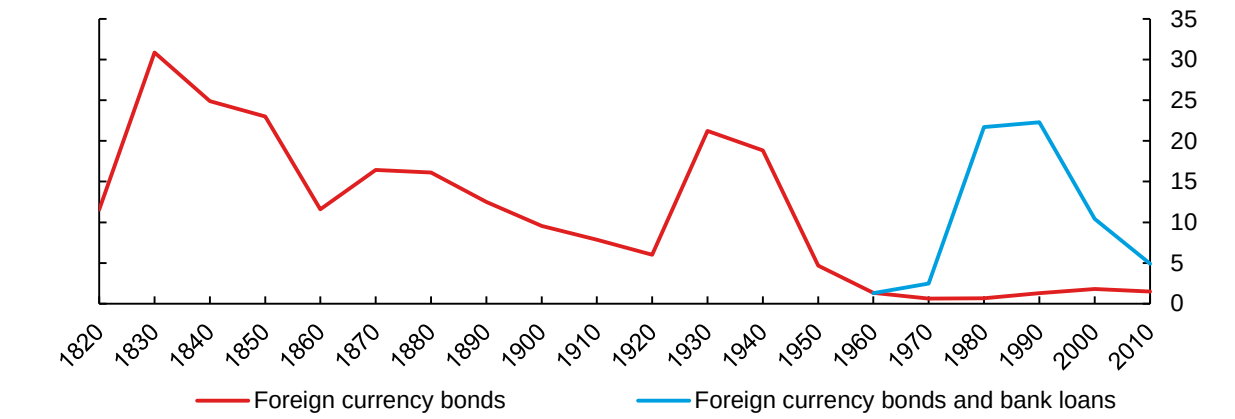
But after the Second World War, owing to pervasive national controls on capital movements, cross-border bond issuance by governments fell to low levels, as did defaults, and both remained low over nearly four decades. For a relatively brief period, in the 1970s and 1980s, foreign currency-denominated 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' 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. Since then, bond defaults have risen again but remain well below their earlier historical peaks.

[7] 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).

Chart 1 provides a snapshot of trends in defaults on foreign currency bonds and bank loans from 1820 to 2013.[8] 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.[9] 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 prewar 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.

Chart 1: Sovereign Default Rates

Foreign currency bonds and bank loans



Note: Default rates are 10-year averages of annual data and cumulative from 2010
Sources: Suter (1992) and CRAG database

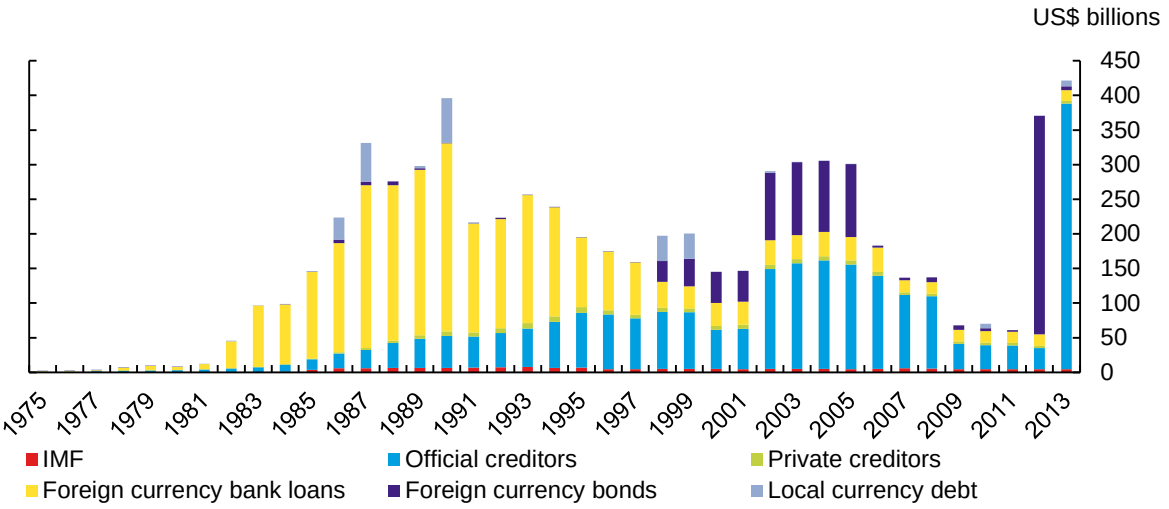
Last observation: 29 January 2014

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.

[8] The data in Chart 1 are partly based on data previously published by Beers and Chambers (2006).
[9] By our count, the total number of sovereigns globally was 36 in 1820, 65 in 1900, 105 in 1950 and 213 in 2013. 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.

By the 1980s, however, the sharp rise in sovereign defaults on 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, official and private debt in default together amounted to nearly US$400 billion by 1990, with official debt accounting for about 11 per cent of the total. By 1995, the share of official creditor debt exceeded 40 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 U.S. 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



Source: CRAG database

Last observation: 29 January 2014

Many of the defaults on official loans persisted 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 Heavily Indebted Poor Country (HIPC) initiative, launched by the IMF and the World Bank (IMF 2012).

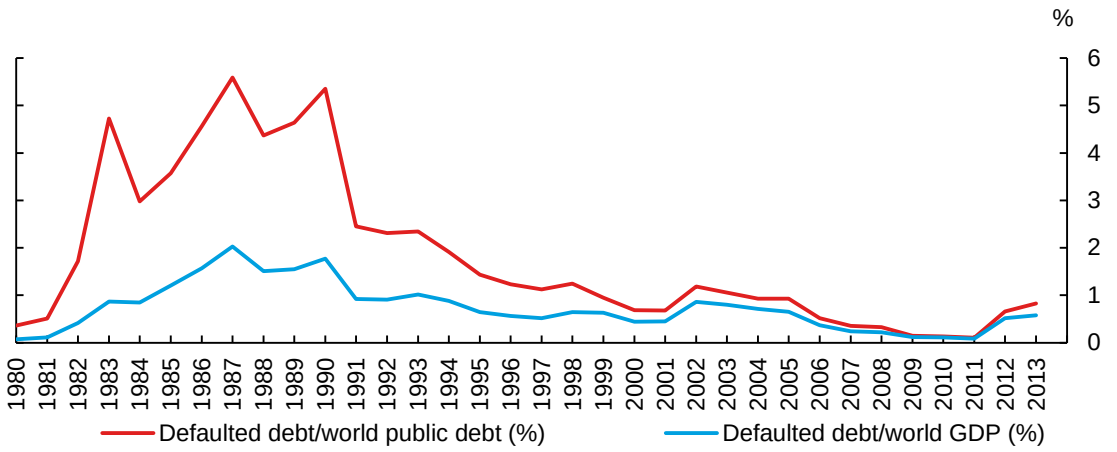
Under the program, now nearing completion, 39 low-income governments became eligible for substantial reductions in their official debt linked to implementation of agreed economic policy reforms. The bulk of the debt was written off by bilateral official creditors, but the IMF and other MLIs also agreed to participate.[10] As a result, and as seen in Chart 2, the dollar amounts of both IMF and bilateral official debt in default have mostly fallen in recent years. The spike that occurs in 2013 results entirely from the restructuring of official loans to Greece, Ireland and Portugal agreed by their European Union partners.[11]

Chart 3 scales the nominal value of debt in default by nominal global public debt and GDP to obtain a more macroeconomic perspective on the relative importance of sovereign defaults. At the start of the 1980s, defaults had minimal impact globally. However, by the middle of the decade, when fiscal stresses affecting low- and middle-income countries were most severe, the sovereign debt that defaulted, was restructured, and in many cases was ultimately written down peaked at just over 5 per cent of global public debt. The increase was milder in terms of global GDP, rising from near zero to about 2 per cent.

Chart 3 also shows that the global footprint left by these debt workouts has since faded, despite Argentina's big default in 2000 and, most recently, the 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 governments grappling with fiscal challenges, these are trends worth watching alongside other potential risks to global financial stability.

[10] Writeoffs of IMF and MLI loans, which under HIPC can reach 100 per cent, were funded by government donors to avoid damaging the institutions' balance sheets and weakening their preferred creditor status.
[11] For Greece, interest rates and charges were reduced, 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.

Chart 3: Sovereign Debt in Default as a Share of World Public Debt and World GDP



Source: CRAG database

Last observation: 29 January 2014

7. Conclusion

The Bank of Canada's new CRAG database 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. 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 U.S. dollars, from 1975 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 to be 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 (2013b-d), World DataBank (2014) via Haver.

1. Afghanistan
IMF Annual Reports (1997-2002), IMF (2013a), IMF Article IV Consultation - Staff Reports (2005-2012), Das, Papaioannou and Trebesch (2012), Paris Club (2014). Note: data on debt owed to official creditors are not available prior to 2002.

2. Albania
Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

3. Algeria
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

4. Angola
Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2013a), Linzmayer (2013), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

5. Antigua and Barbuda
Das, Papaioannou and Trebesch (2012), Durant (2012), IMF (2013h), IMF Article IV Consultation - Staff Reports (2004-2013), Paris Club (2014), Schipke, Cebotari and Thacker (2013), Beers and Chambers (2006).

6. Argentina
Cruces and Trebesch (2011), Durant (2012), Das, Papaioannou and Trebesch (2012), IMF (2013g), Paris Club (2014), Sturzenegger and Zettelmeyer (2005), Beers and Chambers (2006), World DataBank (2014) via Haver.

7. Armenia
World DataBank (2014) via Haver.

8. Azerbaijan
World DataBank (2014) via Haver.

9. Bangladesh
World DataBank (2014) via Haver.

10. Belarus
World DataBank (2014) via Haver.

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

12. Benin
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

13. Bhutan
World DataBank (2014) via Haver.

14. Bolivia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

15. Bosnia & Herzegovina
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1993-1995), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), Stanič (2001).

16. Botswana
World DataBank (2014) via Haver.

17. Brazil
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

18. Bulgaria
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014).

19. Burkina Faso
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014).

20. Burundi
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

21. Cambodia
Boughton, J. (2001), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-1993), IMF (2013a), Paris Club (2014), World Bank (2012), World DataBank (2014) via Haver.

22. Cameroon
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

23. Cape Verde
Beers and Chambers (2006), World DataBank (2014) via Haver.

24. Central African Republic
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014).

25. Chad
Boughton, J. (2001), IMF (2013a), Das, Papaioannou and Trebesch (2012), Paris Club (2014), World DataBank (2014) via Haver.

26. Chile
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

27. Colombia
World DataBank (2014) via Haver.

28. Comoros
Das, Papaioannou and Trebesch (2012), Paris Club (2014), World DataBank (2014) via Haver.

29. Rep. of Congo (Brazzaville)
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

30. Dem. Rep. of Congo (Kinshasa)
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989, 1992-2001), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

31. Cook Islands
AsDB SDBS (2014), Beers and Chambers (2006).

32. Costa Rica
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

33. Côte d'Ivoire
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

34. Croatia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

35. Cuba

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Exotix (2011), Beers and Chambers (2006). Note: Cuba is reported to have bilateral official debt in default, but we have insufficient information to determine the years of default and the estimated amounts involved.

36. Cyprus
European Commission (2003a), IMF (2013f).

37. Djibouti
Das, Papaioannou and Trebesch (2012), Paris Club (2014).

38. Dominica
Cruces and Trebesch (2011), Durant (2012), IMF (2004), IMF (2013j), Schipke, Cebotari and Thacker (2013), Beers and Chambers (2006), World DataBank (2014) via Haver.

39. Dominican Republic
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2013g), Paris Club (2014), Exotix (2011), Schipke, Cebotari and Thacker (2013), Beers and Chambers (2006), World DataBank (2014) via Haver.

40. Ecuador
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2013g), Paris Club (2014), Beers and Chambers (2006), Sturzenegger and Zettelmeyer (2005), World DataBank (2014) via Haver.

41. Egypt
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

42. El Salvador
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

43. Eritrea
World DataBank (2014) via Haver.

44. Ethiopia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

45. Fiji
World DataBank (2014) via Haver.

46. Gabon
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

47. Gambia
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

48. Georgia
Das, Papaioannou and Trebesch (2012), Paris Club (2014), World DataBank (2014) via Haver.

49. Ghana
Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2013a), Linzmayer (2013), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

50. Greece
IMF (2013e, g), Zettelmeyer, Trebesch and Gulati (2013).

51. Grenada
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), IMF (2013g), Paris Club (2014), Schipke, Cebotari and Thacker (2013), Beers and Chambers (2006), World DataBank (2014) via Haver.

52. Guatemala
Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

53. Guinea
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

54. Guinea-Bissau
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

55. Guyana
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-1990), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

56. Haiti
Boughton, J. (2001), Das, Papaioannou and Trebesch (2012), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

57. Honduras
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

58. India
World DataBank (2014) via Haver.

59. Indonesia
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

60. Iran
Rieffel (2003), Beers and Chambers (2006), Suter, C. (1992), World Bank (2013), World DataBank (2014) via Haver.

61. 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 (2005-2013), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver. Note: data on debt owed to official creditors are not available prior to 2002.

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

63. Jamaica
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Durant (2012), Exotix (2011), Grigorian, Alleyne and Guerson (2012), IMF (2013g), Paris Club (2014), Schipke, Cebotari and Thacker (2013), Beers and Chambers (2006), World DataBank (2014) via Haver.

64. Jordan
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

65. Kazakhstan
World DataBank (2014) via Haver.

66. Kenya
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

67. Korea (North)
Exotix (2011), Haggard and Noland (2010), Linzmayer (2013), Beers and Chambers (2006). Note: North Korea is reported to have bilateral official debt in default, but we have insufficient information to determine the years of default and the estimated amounts involved. Haggard and Noland (2010) also report that central bank note exchanges in 1992 and 2009 were on confiscatory terms, but we have insufficient information to estimate the amounts affected.

68. Kuwait
Ghabra (1991), IMF IFS via Haver (1992), Beers and Chambers (2006).

69. Kyrgyzstan

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

70. Laos
World DataBank (2014) via Haver.

71. Latvia
World DataBank (2014) via Haver.

72. Lebanon
World DataBank (2014) via Haver.

73. Lesotho
World DataBank (2014) via Haver.

74. Liberia
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-2007), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

75. Macedonia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), Stanič (2001), World DataBank (2014) via Haver.

76. Madagascar
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

77. Malawi
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

78. Maldives
World DataBank (2014) via Haver.

79. Mali
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

80. Mauritania
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

81. Mauritius
World DataBank (2014) via Haver.

82. Mexico

Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

83. Moldova
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

84. Mongolia
Exotix (2011), Beers and Chambers (2006).

85. Morocco
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006).

86. Mozambique
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012).

87. Myanmar
IMF IFS via Haver (1985, 1987), Beers and Chambers (2006), Linzmayer, (2013), Paris Club (2014), World DataBank (2014) via Haver.

88. Nepal
World DataBank (2014) via Haver.

89. Nicaragua
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

90. Niger
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

91. Nigeria
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

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

93. Panama
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-1991), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

94. Paraguay
Cruces and Trebesch (2011), Beers and Chambers (2006), World DataBank (2014) via Haver.

95. Peru
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-1992), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

96. Philippines
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

97. Poland
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

98. Portugal
European Commission (2013c), European Union (2013).

99. Romania
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

100. Rwanda
Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

101. St. Kitts & Nevis
Durant (2012), IMF (2013g, i), Paris Club (2014), Schipke, Cebotari and Thacker (2013), World DataBank (2014) via Haver.

102. St. Lucia
World DataBank (2014) via Haver.

103. St. Vincent and the Grenadines
World DataBank (2014) via Haver.

104. Samoa
World DataBank (2014) via Haver.

105. São Tomé and Príncipe
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

106. Senegal
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

107. Serbia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1993-2000), IMF (2013a), Paris Club (2014), Stanič (2001), Beers and Chambers (2006).

108. Seychelles
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF (2013g), Paris Club (2014), Exotix (2011), Schipke, Cebotari and Thacker (2013), Beers and Chambers (2006).

109. Sierra Leone
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-1993), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

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

111. Somalia
Boughton, J. (2001), Das, Papaioannou and Trebesch (2012), IMF Annual Reports (1989-2012), IMF (2013a), Paris Club (2014), World DataBank (2014) via Haver.

112. Solomon Islands
AsDB SDBS (2014), IMF (2007), IMF (2013a), IMF Article IV Consultation - Staff Reports (2004-2011), World DataBank (2014) via Haver.

113. South Africa
Cruces and Trebesch (2011), Beers and Chambers (2006).

114. Sri Lanka
Das, Papaioannou and Trebesch (2012), Paris Club (2014), World DataBank (2014) via Haver.

115. Sudan
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1989-2012), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World DataBank (2014) via Haver.

116. Suriname
IMF Article IV Consultation - Staff Reports (2003-2013), Beers and Chambers (2006).

117. Swaziland
World DataBank (2014) via Haver.

118. Tajikistan
World DataBank (2014) via Haver.

119. Tanzania

Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

120. Thailand
World DataBank (2014) via Haver.

121. Togo
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

122. Tonga
World DataBank (2014) via Haver.

123. Trinidad & Tobago
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006).

124. Tunisia
World DataBank (2014) via Haver.

125. Turkey
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006).

126. Turkmenistan
World DataBank (2014) via Haver.

127. Uganda
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

128. Ukraine
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), Paris Club (2014), Beers and Chambers (2006), Sturzenegger and Zettelmeyer (2005).

129. Uruguay
Cruces and Trebesch (2011), Beers and Chambers (2006), Sturzenegger and Zettelmeyer (2005), World DataBank (2014) via Haver.

130. USSR/Russia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), Sturzenegger and Zettelmeyer (2005).

131. Uzbekistan
World DataBank (2014) via Haver.

132. Vanuatu

World DataBank (2014) via Haver.

133. Venezuela
Cruces and Trebesch (2011), Exotix (2011), Beers and Chambers (2006), World DataBank (2014) via Haver.

134. Vietnam
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Exotix (2011), IMF Annual Reports (1989-1993), IMF (2013a), Paris Club (2014), Beers and Chambers (2006).

135. Yemen
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

136. Yugoslavia
Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), Paris Club (2014), Beers and Chambers (2006), Stanič (2001).

137. Zambia
Boughton, J. (2001), Cruces and Trebesch (2011), Das, Papaioannou and Trebesch (2012), IMF Annual Reports 1989-1995, IMF (2013a), Paris Club (2014), Beers and Chambers (2006), World Bank (2012), World DataBank (2014) via Haver.

138. Zimbabwe
Corporation of Foreign Bondholders (1981), IMF Annual Reports (2001-2013), IMF (2013a), Beers and Chambers (2006), World DataBank (2014) via Haver.