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BoC–BoE Sovereign Default Database: what's new in 2020?

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Abstract

The Boc–BoE database of sovereign debt defaults, published and updated annually by the Bank of Canada and the Bank of England, provides comprehensive estimates of stocks of government obligations in default. The 2020 edition includes a new section examining the scale of domestic arrears in 2018.

Topics: Debt management; Development economics; Financial stability; International financial markets
JEL codes: F34, G10, G14, G15

Résumé

La base de données sur les défauts souverains publiée et actualisée tous les ans par la Banque du Canada et la Banque d'Angleterre fournit des estimations complètes de l'encours des dettes publiques en souffrance. La mise à jour de 2020 comprend une nouvelle section sur l'ampleur des arriérés intérieurs en 2018.

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

Codes JEL : F34, G10, G14, G15

Introduction

Until recently, few efforts have been 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) developed a comprehensive database of sovereign defaults beginning in 2014. The database is posted on its website and updated annually in partnership with the Bank of England (BoE).

The database draws on previously published datasets compiled 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 2019 on both a country-by-country and a global basis.

This update of the BoC–BoE database, and future 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.

2020 findings

Since 1960, 147 governments have defaulted on their obligations—well over half the current universe of 214 sovereigns.

Defaults had the biggest global impact in the 1980s, peaking at US$450 billion, or 6.1 percent of world public debt, by 1990. The scale of defaults has fallen substantially since then. Over the past decade, it has ranged between 0.3 and 0.9 percent of world public debt, and in 2019 it was an estimated 0.4 percent.

As in other recent years, the distribution of defaults in 2019 is highly skewed in terms of value. Just three sovereigns—Venezuela, Puerto Rico and Sudan—accounted for 61 percent of the US-dollar value of debt in default globally, and the top 10 sovereigns in default accounted for 89 percent.

Our evidence offers a more nuanced view of earlier research on sovereign default "clusters"—spikes in the number of defaults followed by sharp declines—once we take into account the debt owed to official creditors. Such defaults often take longer to resolve than defaults involving private creditors. While the US-dollar amounts can be low in absolute terms, a high number of low-income sovereigns can remain in default for long periods.

As a percentage of total government debt, shares of sovereign debt in default are skewed toward lower values. About 72 percent of observations are equal to or below 10 percent of government debt. These data provide further confirmation of sovereigns' tendency to "default selectively." Only 48 sovereigns—6 percent of observations—defaulted on shares ranging between 50 and 100 percent of the totals.

Defaults involving the Paris Club group[1] of official creditors are declining in importance, but those involving other bilateral official creditors, including China, are growing.

Sovereign defaults on local currency debt are more common than sometimes assumed. Since 1960, 32 sovereigns have defaulted on local currency debt.

We conclude that defaults will pick up again in 2020 and in subsequent years. Many advanced and emerging-market economies countries are facing growing public debt burdens. And the impacts from the global shocks of COVID-19 and the oil price collapse will continue to reverberate. Because of the potential scale and number of defaults, resolving them will test existing sovereign debt workout mechanisms—probably to an extent not seen since the debt crisis of developing countries in the 1980s.

In this year's update, our first estimate puts the total value of sovereign debt in default at US$295.6 billion in 2019, down sharply from the revised total of US$395.9 billion in 2018. The data by major creditor categories show that last year's decline mainly reflected lower defaults affecting "other official creditors."[2] This category had been boosted in 2018 by Greece's restructuring of US$111 billion in official debt (from the European Stability Mechanism and other EU partners), which dropped out of the 2019 total.[3]

Foreign currency bonds in default rose by US$14 billion to nearly US$102 billion. This reflects:

- a first-time default by Barbados
- the restructuring of Argentina's bonds governed by local law and Mozambique's bonds governed by foreign law
- higher interest arrears from ongoing bond defaults by Venezuela and Puerto Rico[4]

In contrast, local currency debt in default fell from US$5.9 billion to US$4.2 billion. A jump in Argentina's restructured debt was more than offset by Barbados' debt restructuring in 2018, which dropped out of the total. Meanwhile, identified Paris Club loans in default declined, as did loans due to China and to foreign banks. The values of defaulted debt in other creditor categories changed little.

The other main changes in this update are:

- additional data for defaults on China's official loans since 2000
- updated annual data (where available) for each country's total central government debt

[1] For more information, see the Paris Club website.

[2] This category excludes the International Monetary Fund (IMF), the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the Paris Club and China.

[3] For more details, see Chart 2.

[4] Smaller defaults involve not-yet-completed exchanges of old Argentine defaulted bonds and non-performing bonds issued by Nauru and Zimbabwe.

- minor revisions of country and aggregate default data for 1960–2018
- a new section examining the scale of domestic arrears in 2018, with data included in the DOMARS tab at the bottom of the main database spreadsheet
- updates of two other tabs—DATA provides a downloadable format for the global and country default data, and DEBTOTAL provides country data on total government debt stocks

Incorporating domestic arrears in the sovereign default database

From the inception of the BoC–BoE database in 2014, its coverage has been based on a broad definition of sovereign default—one that tracks both interruptions of scheduled debt service and changes in debt payment terms that result in creditor losses. For defaults involving private creditors, this includes marketable debt denominated in foreign and local currency. Still, other government fiscal actions suggest that the sovereign default perimeter should be extended further. Notably, there is substantial evidence that late payments by governments for goods and services—called domestic, fiscal or expenditure arrears—also create obligations to domestic creditors that are effectively in default and must ultimately be resolved.

Both the definition and the determination of domestic arrears are relatively straightforward, at least in theory (Flynn and Pessoa 2014). Arrears are generally defined as any overdue payments for legally mandated or contractually required 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 penalties and interest charges can accrue when payments are late by more than 30 or 90 days. When arrears accumulate over a number of years or their legality is disputed governments and their creditors usually rely on domestic courts or ad hoc tribunals to reconcile and confirm claims before resolving them. Once finalized, these obligations are settled by some combination of cash payments and the issuance of new debt to creditors. Given the often extended time frame between when arrears emerge and when they are settled, it is clear that the domestic creditors involved incur material losses. Like conventional sovereign debt, however, outright repudiations of domestic arrears appear to be relatively rare.[5]

The clearance of arrears, and the adoption of polices to discourage them from recurring, are frequently objectives of the International Monetary Fund's (IMF) country programs. This is not surprising, given the adverse impact that government arrears have on private sector activity in

[5] Currency confiscations documented in the BoC–BoE database could be vehicles for at least partial repudiation of arrears.

affected countries.[6] But at the same time, IMF documents highlight that domestic arrears, like conventional sovereign defaults, often persist and recur. And like conventional defaults, arrears involve a broad spectrum of developing, emerging-market and (although less frequently) high-income sovereigns.

Until recently, the published IMF data on domestic arrears had limitations. The data reported usually identified *flows* of arrears, not *stocks*, based on government estimates subject to change. Moreover, since the IMF rarely reported estimated stocks of arrears, comparisons with the value of conventional sovereign debt in default were challenging. But IMF practice has changed: it now regularly reports domestic arrears data on a stock basis and explicitly incorporates them into the data on public debt. As a result, we can begin to compare data on arrears with the conventional defaults we currently report in the BoC–BoE sovereign default database.

Table 1 highlights the 2018 domestic arrears data we compiled for 51 sovereigns from recent IMF Article IV and program documents.[7] It includes the US-dollar value of stocks of arrears and their shares of each country's gross domestic product (GDP) and public debt. As noted above, in the 2020 BoC–BoE database, the new 2018 domestic arrears dataset is available in a separate tab, DOMARS, at the bottom of the downloadable spreadsheet. We plan to track arrears annually for each sovereign that incurs them in a new "domestic arrears" category of the database. We will also include arrears data we are able to gather for earlier years. With this wider coverage, we have two aims: first, to provide a more comprehensive picture of the scale of historical sovereign debt in distress; and, second, to evaluate whether domestic arrears are best viewed as a coincident indicator or as a driver of conventional sovereign defaults.

6 For a recent discussion, see P. N'Diaye et al., "Background Paper: Annex Chapter 3—Domestic Arrears in SSA," Regional Economic Outlook: Sub-Saharan Africa, International Monetary Fund (October 2019): 27–58.

7 The relevant sources are included in the country listings in the Appendix of "BoC–BoE Sovereign Default Database: Methodology, Assumptions and Sources."

Our main findings on the 2018 data:

Table 1: Domestic arrears, 2018

Domestic arrears 2018	% GDP	Stock of arrears ($ millions)	Arrears/public debt (%)
Albania	1.8	271	2.6
Angola	4.4	4100	4.1
Argentina	0.1	317	0.1
Barbados	12.0	610	9.5
Benin	0.2	34	0.6
Burkina Faso	0.8	115	1.9
Cameroon	2.3	900	5.9
Central African Rep.	3.9	89	7.8
Chad	2.2	246	4.6
Comoros	1.8	21	8.6
Congo, Rep.	14.5	1691	16.5
Congo, DR	6.6	3109	43.1
Cote d'Ivoire	0.2	98	0.4
Curaçao	0.5	16	0.9
Ecuador	1.0	1127	2.3
Equatorial Guinea	9.0	1236	20.8
Gabon	3.0	510	5.0
Gambia	1.8	29	2.1
Guinea	1.6	192	4.2
Guinea-Bissau	12.2	174	18.9
Honduras	1.1	261	2.7
Iran	20.0	89211	62.2
Iraq	1.3	2915	2.6
Jamaica	0.3	50	0.3
Jordan	0.5	196	0.5
Kenya	1.0	879	1.7
Laos	1.3	236	2.3
Lesotho	2.0	54	4.5
Liberia	3.4	110	8.5
Madagascar	0.5	71	1.3
Malawi	1.4	98	2.1
Mali	0.3	52	0.8
Moldova	0	3	0.1
Mozambique	0.75	108	0.8
Nauru	43.9	**49**	21.7
Nicaragua	3.8	0	0.0
Niger	1.8	167	3.3
Pakistan	2.6	8092	3.6
Panama	2.3	1500	5.1
St. Maarten	2.9	28	5.4
Sao Tome	8.7	37	11.7
Senegal	0.7	164	1.1
Sierra Leone	1.0	416	16.2
Somalia	1.5	69	1.4
South Sudan	7.3	254	17.5
Sudan	0.6	220	0.3
Sri Lanka	0.6	533	0.7
Suriname	4.0	137	5.5
Uganda	3.0	843	7.3
Zambia	1.5	401	1.9
Zimbabwe	0.5	108	1.4
Totals	**4.8**	**$122,148**	**7.6**

- In aggregate, the stock of identified domestic arrears was sizable in 2018, amounting to US$122 billion, 4.8 percent of the group's GDP and 7.6 percent of its public debt.
- By comparison, global defaults on conventional sovereign debt in that year totalled US$396 billion. Excluding Greece's exceptional reprofiling of its official debt, defaults amounted to US$285 billion.
- Consequently, identified arrears in 2018 were equivalent to 31 percent of all conventional debt then in default; excluding Greece, they were 43 percent.
- Domestic arrears are correlated with conventional defaults: over half of the sovereigns in default in 2018 also had domestic arrears.
- As a share of public debt, arrears ranged widely in 2018—from 0.1 percent (Argentina) to 62.1 percent (Iran).
- For 9 sovereigns, their share of domestic arrears in public debt exceeded 10 percent; for 10 others the share ranged between 5 and 10 percent.
- The actual scale of domestic arrears in 2018 was almost certainly higher globally, as the data do not cover all potential cases. For example, neither Lebanon nor Venezuela, where arrears in 2018 may have been and could still be substantial, report them to the IMF. In Lebanon's case, this may change if its request for an IMF Fund program proceeds.

Sovereign defaults in historical perspective

The BoC–BoE database and its future updates are helpful to researchers analyzing the economic and financial effects of sovereign defaults on debt owed to official and private creditors from 1960 onward. The dataset 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. In the commentary that follows, we highlight some of the most noteworthy trends.

From the historical record, we know that for nearly 200 years the story of sovereign defaults has centred mainly, though not exclusively, on foreign currency bonds and other marketable securities.[8] Cross-border bond financing for governments emerged in the 1820s, when newly independent states in Latin America and other regions, as well as some longer-established sovereigns, began issuing bonds denominated in foreign currency in European financial centres. Defaults soon followed on a substantial scale and persisted well into the 20th century. Defaults on debt denominated in local currency also occurred, but, from the evidence available for the pre-1960 era, they appear to have been less frequent (Reinhart and Trebesch 2014).

After the Second World War, because of 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 Eastern European countries defaulted on bank loans in the 1980s and 1990s, leading to creditor losses. The banks' subsequent exit from this business, in turn, resulted in many low- and middle-income sovereigns regaining access to cross-border bond markets in the 1990s. That access continues to this day.

The period since the 1990s is also noteworthy because of growing cross-border investments in the market debt denominated in the local currency of emerging-market sovereigns.[9] This development was a factor in a number of defaults involving such sovereigns as Russia and Argentina, where restructurings of their foreign currency bonds were also involved. These defaults on foreign currency bonds, though also increasing, nonetheless remain well below their pre–Second World War historical peaks.

Chart 1 provides a snapshot of trends in defaults on foreign currency bonds and bank loans from 1820 to 2019.[10] Because of limited historical data on bonds for much of this period, we calculate unweighted default *rates*, that is, governments in default as a percentage of *all*

[8] This section of our updated report draws in part on previous work published by Beers and Chambers (2006), Cruces and Trebesch (2011), Rieffel (2003), Reinhart and Rogoff (2009) and Suter (1992).

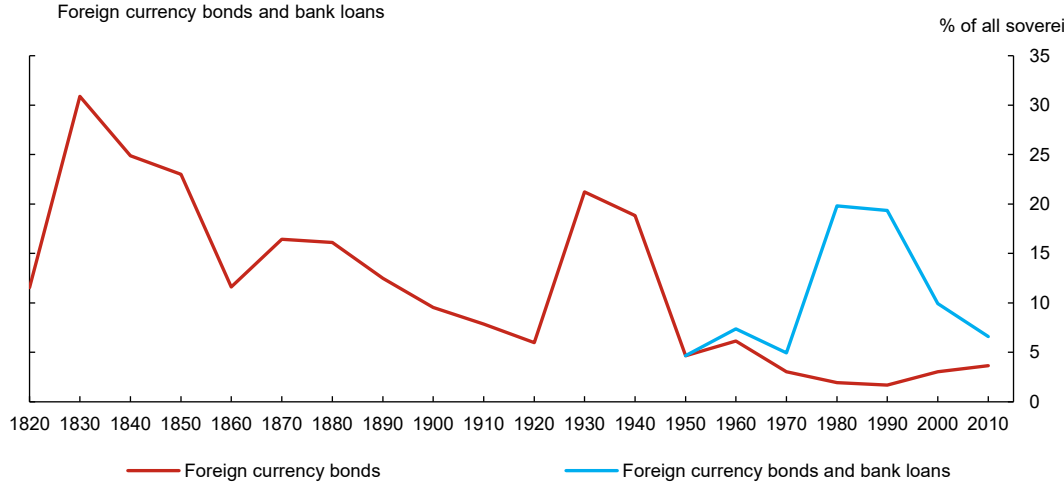
[9] For further commentary about sovereign defaults on local currency debt, see "How Frequently Do Sovereigns Default on Local Currency Debt?"

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

governments.[11] For bonds, three peak default periods stand out—from the 1830s through the 1850s, when default rates exceeded 25 percent; in the 1870s, when default rates averaged 18 percent; and in the 1930s, when they reached 21 percent. Of note, too, is the sharp decline in bond defaults after the Second World War that persisted through the 1980s. The resolution of many pre-war bond defaults was the main driver of the fall in the default rate. At the same time, the fragmentation of the early post–Second World War cross-border financial markets limited bond market access to only the most creditworthy borrowers, and so defaults on new issues were low.

Chart 1: Sovereign default rates

Foreign currency bonds and bank loans



Note: Default rates are 10-year forward-looking averages.
Sources: Suter (1992) and BoC–BoE database

Last observation: 2019

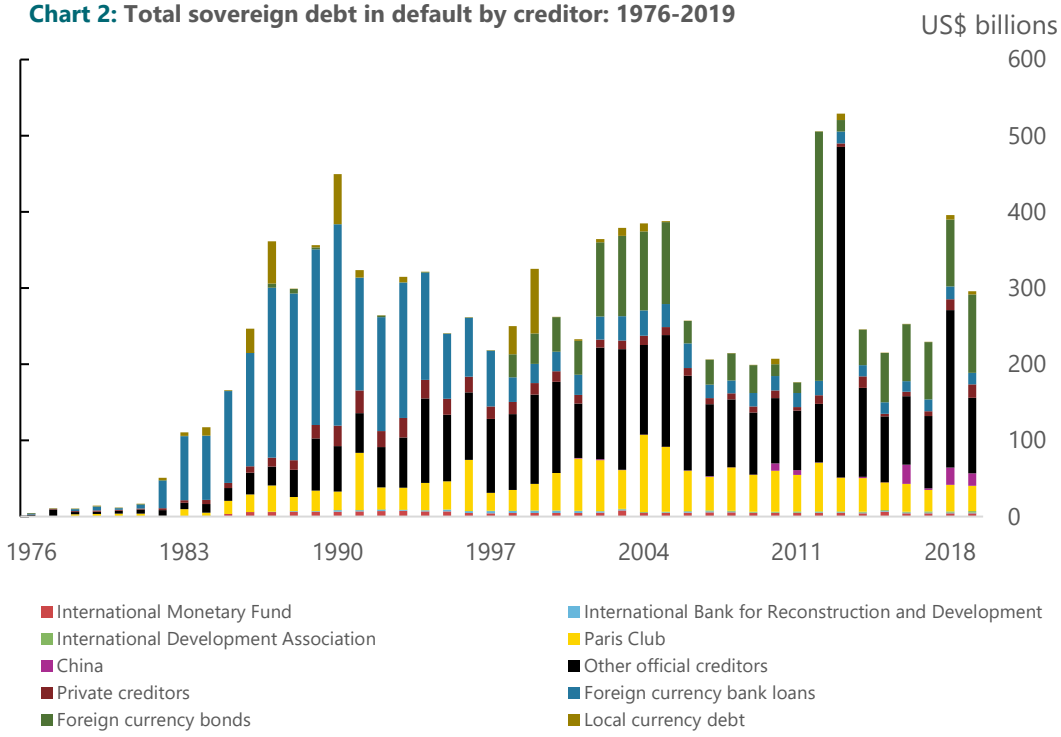
Before the Second World War, sovereign defaults on official loans played only an intermittent role. Then, after 1945, lending to governments by the IMF and other newly established multilateral institutions (MLIs) quickly gained prominence. These institutions, as well as national export credit and development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

By the 1980s, however, the sharp rise in sovereign defaults on foreign currency bank loans shown in **Chart 1** was accompanied by growing defaults on loans from official creditors. Even arrears on IMF loans surfaced, although their size was minor compared with defaults to other creditors. The factors driving both bank loans and official loans into default were often closely linked, due to the adverse fiscal impact in many countries from the spike in world oil prices and in US short-term interest rates. The latter directly influenced the cost of syndicated bank

[11] By our count, the total number of sovereigns globally was 36 in 1820, 65 in 1900, 105 in 1950 and 214 in 2019. Reinhart and Rogoff (2009) have calculated historical sovereign default rates weighted by estimated aggregated GDP. However, because of reliability issues relating to pre–Second World War national income data in many countries, we have not replicated this approach here.

loans contracted by many sovereign borrowers and helped ratchet up the real burden of their public debt. Sovereign debt in default reached US$450 billion by 1990, with debt owed to official creditors accounting for about 21 percent of the total (**Chart 2**). By 1995, the share of official creditor debt exceeded 50 percent.

Chart 2: Total sovereign debt in default by creditor: 1976-2019



Source: BoC–BoE database

Last observation: 2019

Many of the defaults on official loans continued for long periods because of the borrowers' internal economic and political difficulties 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 in part to the multilateral Heavily Indebted Poor Countries (HIPC) Initiative, launched with strong support from the IMF and the World Bank (IMF 2016a).

Under the program, now nearing completion, 39 low-income governments became eligible for substantial reductions in their official debt linked to the implementation of agreed-upon economic policy reforms.[12] Bilateral official creditors wrote off much of the debt, while the IMF and other MLIs also agreed to participate through the Multilateral Debt Relief Initiative.[13]

[12] Somalia began receiving HIPC debt relief in 2020. Two other sovereigns—Eritrea and Sudan—remain eligible but have not yet commenced the process.

[13] Government donors funded write-offs of IMF and MLI loans, which under the Multilateral Debt Relief Initiative can reach 100 percent, to avoid damaging the institutions' balance sheets and weakening their preferred creditor status.

As a result, the dollar amounts of IMF, World Bank, Paris Club and other official (apart from China) debt in default have fallen in most years since 2006 (**Chart 2**).

That said, three recent developments are worth highlighting. One is the spike in problematic official debt that occurred in 2013 and again in 2018 (**Chart 2**). In the first instance, the spike resulted from the restructuring (without any interruption of scheduled debt service) of loans to Greece, Ireland and Portugal agreed to by their EU partners.[14] While fiscal pressures in the euro area have eased since then, Greece is a partial exception, as reflected in the delay in its payment of US$2.2 billion to the IMF in 2015 and the restructuring of another US$110.9 billion of official debt following the completion of its stabilization program in 2018.[15]

The second noteworthy development is that defaults persist in the majority of HIPC countries, amounting to about US$21 billion in 2019 (**Chart 3**), their second-highest level since 2010. This is partly due to the slow pace at which some non–Paris Club official creditors are implementing debt relief. Official creditor holdouts may be less well known than litigious holdout bondholders but, like them, can also delay the resolution of defaulted debt. Increasingly, however, it is evident that some sovereigns are also defaulting on new loans contracted from official and private creditors after they received HIPC debt relief.[16]

A third development is the sea change underway in the composition and scale of bilateral official lending. Since the 1980s, sovereign debt owed to bilateral official and private creditors has generally been restructured according to the "comparability of treatment" principles set by the Paris Club.[17] Despite occasional frictions with other official creditors, and with bank creditors and bondholders, these arrangements have been broadly effective in resolving sovereign defaults.

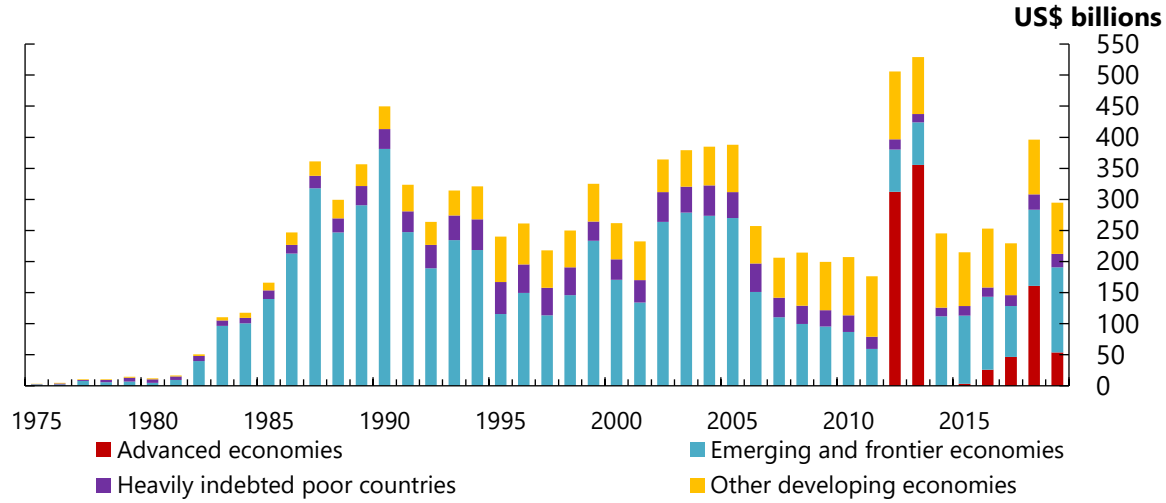
[14] For Greece, creditors reduced interest rates and charges and deferred debt service. They also extended average maturities of European Union or euro area official loans to Greece, Ireland and Portugal by up to seven years. These official debt restructurings are consistent with our definition of sovereign defaults because they result in creditor losses in present-value terms.

[15] See Khan and Brunsden (2018) for details about Greece's 2018 restructuring of official debt agreed to with euro area official creditors.

[16] For example, two HIPC sovereigns—the Republic of Congo and Mozambique—defaulted on US$2.8 billion of bonds and bank loans between 2016 and 2019, and in 2020 Congo signalled its intent to pursue a broad debt restructuring.

[17] Comparability of treatment refers here to the principle that any debt relief the Paris Club provides to sovereigns should be broadly replicated by other bilateral official and private creditors.

Chart 3: Sovereign debt in default, by debtor



Source: BoC–BoE database

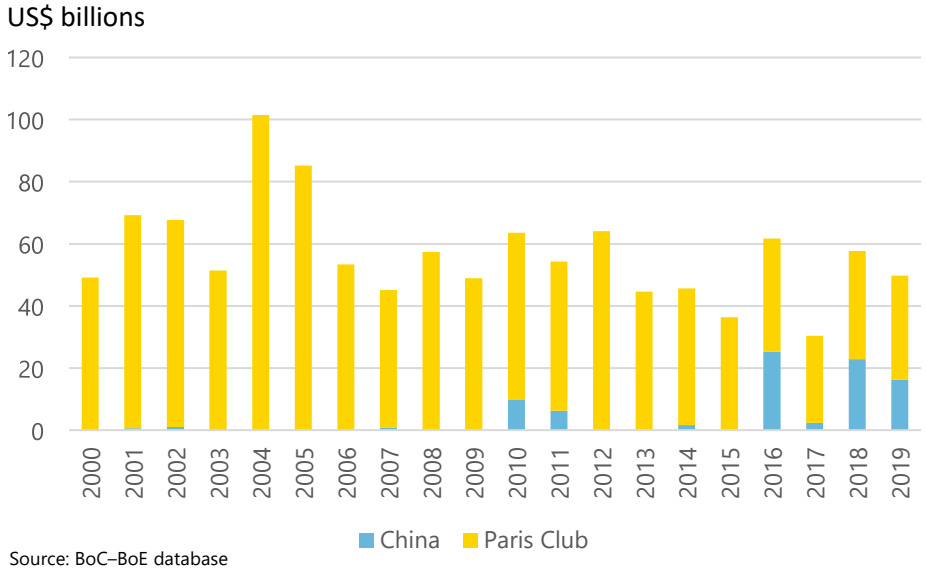
Last observation: 2019

The issue now, however, is that the Paris Club no longer represents all the large bilateral official creditors. With some members placing more emphasis on grants, its stock of loans to emerging-market and developing economies—US$317 billion in 2019—has been relatively static in recent years. By contrast, bilateral loans from China, India and the Gulf states have grown sharply and, in aggregate, are now larger than those of the Paris Club (Hurley, Morris and Portelance 2018). However, these "new" official creditors have not yet formally joined the Paris Club.[18]

In this context, China's bilateral official lending has generated particular interest. According to independent estimates, its Belt and Road Initiative (BRI), launched in 2013, could result in US$1 trillion or more of new financing by 2027 (PricewaterhouseCoopers 2016; Morgan Stanley 2018). Emerging-market and low-income sovereigns are the largest BRI recipients. The available data on defaulted Chinese official loans indicate that, since 2010, they have increased relative to those in the Paris Club (**Chart 4**) and, at times, overlap with them.

[18] However, China, India, Abu Dhabi, Kuwait and a few other governments have participated in some Paris Club meetings on an ad hoc basis (Paris Club 2020b).

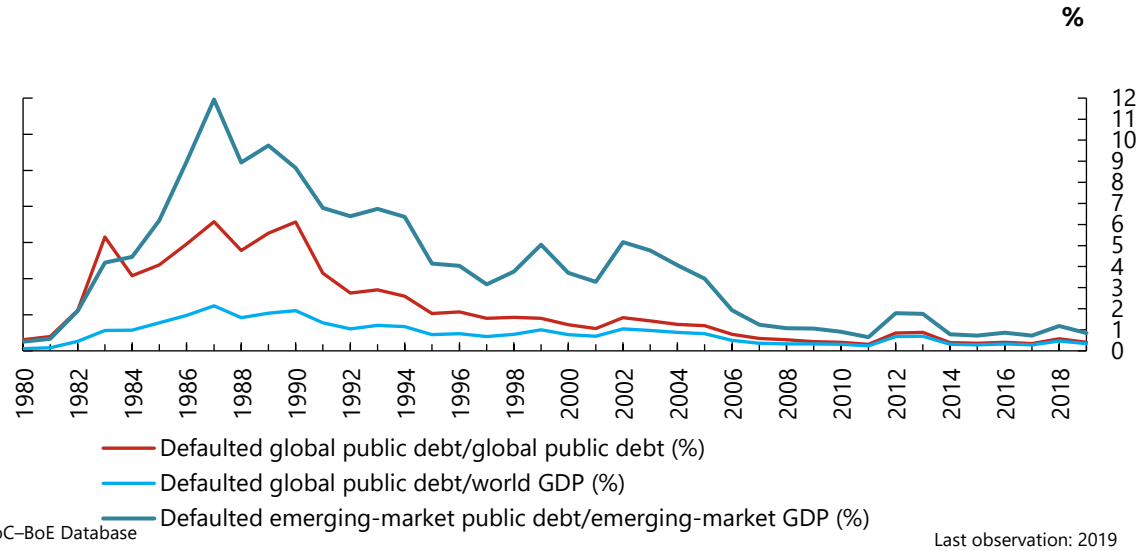
Chart 4: Official loans in default: Paris Club vs. China 2000–19



Source: BoC–BoE database

We compare the nominal value of debt in default by global public debt and both global GDP and the GDP of emerging-market and developing economies to assess the relative importance of sovereign defaults (**Chart 5**). At the start of the 1980s, sovereign defaults had minimal impact globally. However, by the middle of the decade, fiscal stresses affecting low- and middle-income countries were significant. The sovereign debt that defaulted, was restructured and (in many cases) was ultimately written down peaked in 1990, at 6.1 percent of global public debt. Relative to this group's GDP, the peak was sharper still, at 11.9 percent, but was milder in terms of global GDP, rising from near zero to 2.1 percent.

Chart 5: Sovereign debt in default as a share of global public debt and global GDP



Source: BoC–BoE Database

Last observation: 2019

Chart 5 also highlights that the global footprint left by these debt workouts has since faded, despite Argentina's last big default in 2001 and the more recent restructurings of sovereign bonds and official loans in the euro area. Nonetheless, sparked partly by the global economic and financial shock of the 2020 COVID-19 pandemic, the frequency of such events looks set to rise significantly and to be more closely correlated with rising public debt burdens than at any time since the 1930s. The expected growth in number and scale of defaults, in turn, will challenge the existing framework for resolving them. In particular, rising US–Chinese tensions could weaken coordination among official creditors and result in more protracted default cases. As governments grapple with increasing fiscal challenges, these trends are worth watching alongside other risks to global financial stability.

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