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Avoiding 'Too Little Too Late' on International Debt Relief

by Lars Jensen



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Avoiding ‘Too Little Too Late’ on International Debt Relief

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Abstract

This paper takes stock of the unfolding debt crisis across developing low- and middle-income countries and discusses how to break with the inertia in debt restructurings under the Common Framework for Debt Treatments (CF). Using data on credit ratings, debt sustainability ratings, and sovereign bond spreads the paper identifies 54 developing economies with severe debt problems. They represent little more than 3 percent of the global economy, 18 percent of the population, but account for more than 50 percent of people living in extreme poverty – including 28 of the world’s top-50 most climate vulnerable countries. The debt crisis is intensifying. Debt is trading in distressed territory for more than one third of developing economies issuing dollar debt in international markets, with 19 countries paying more than 1,000 basis points over US Treasury bonds. Similarly, of all developing economies with a sovereign credit rating, 26 – close to one third – are now rated either ‘substantial risk, extremely speculative or default’. The largest geographical subgroup among the 54 is Sub-Saharan Africa with 25 countries followed by Latin America and the Caribbean with 10 countries. Given the global outlook of low growth and high interest rates, the international community must urgently step-up debt relief efforts to avert a deepening development crisis. The paper proposes a way forward for the CF focusing on issues of official creditor coordination, private creditor participation, and the use of state-contingent debt clauses that target future economic and fiscal resilience. Fundamentally, the paper argues that the focus must shift from debt rescheduling to comprehensive restructuring involving write-offs allowing countries a faster return to growth, financial markets, and development progress. A structurally different future of tighter funding conditions and higher frequency of climate disasters will require a re-think and ramp-up of official sector concessional lending to vulnerable developing economies.

1. Introduction

An already bad debt outlook has deteriorated rapidly across developing economies since the start of the year with fast rising interest rates pushing up borrowing costs, decreasing fiscal space and driving countries into or closer to debt distress.² A least 54 developing economies are suffering from severe debt problems. Together they represent little more than 3 percent of global GDP but 18 percent of the global population, more than 50 percent of people living in extreme poverty, and 28 of the world's top-50 most climate vulnerable countries. Much in line with the history of debt relief, efforts have still not caught up to the seriousness of the unfolding debt crisis. The international community should not wait until interest rates drop or a global recession kicks in to take action: the time to avert a prolonged development crisis is now. Creditors, debtors, and guarantors must act fast and decisively to avoid past mistakes of providing 'too little too late' debt relief.

Debt troubles in DEs were already brewing long before COVID and the rapid build-up in debt over the past decade has been consistently underestimated. Past major developing economy debt crises were only finally resolved when debt restructuring changed focus from rescheduling to face value reductions. Major relief initiatives such as the Brady Plan and later the highly indebted poor countries (HIPC) initiative, despite arriving late, contributed significantly to reducing debt-burdens and improve development prospects, but did not prevent a resurgence of debt trouble. Given the current economic and debt outlook this raises the question of how debt relief can be designed to better help countries improve their future fiscal and economic resilience.

Today, the main international debt relief offer open to (some) countries suffering from debt distress is the G20 Common Framework for Debt Treatments (CF). But with only three countries undergoing treatment and none having concluded a restructuring more than 18 months after signing on, it has not been a success. There is broad agreement that the CF needs to be reformed and additional measures of liquidity support put in place given the tightening of global financial conditions. In addition, official sector long-term lending must be stepped up significantly in order to avoid a widespread and persistent debt-induced development crisis.³ This paper proposes ways in which to kick-start the CF and avoid past mistakes.

Section 2 of this paper summarizes the severity of the debt situation and outlook across developing economies showing that the debt build-up over the past decade, prior to the COVID-19 shock in 2020, has been consistently underestimated. It identifies 54 developing economies with severe debt problems including more than one third of all developing economies issuing debt in international capital markets with bond spreads trading in distressed territory, and close to one third of all developing economies now with a credit rating at

² Developing economies here refers to all low- and middle-income countries as per World Bank income group classification.

³ See for instance Georgieva & Pazarbasioglu (2021) and IMF (2022e).

either ‘substantial risk, extremely speculative or in default’. Section 3 argues that debt relief measures offered in response to the pandemic have been, and continue to be, highly inadequate. Section 4 takes a closer look at what happened to debt-burdens under and ‘after’ HIPC (the latest major debt relief initiative), and the drivers of their resurgence, including the important role of external demand and exports. Section 5 provides a simple simulation example of how state-contingent debt instruments (SCDI) in the form of GDP-indexing of interest payments on external public debt could potentially have affected fiscal resources in the period 2010 to 2020, including resources freed up in 2020 as COVID-19 hit. Results are then compared to the size of debt service suspensions under the Debt Service Suspension Initiative (DSSI) and the 2021 Special Drawing Rights (SDR) allocation. Section 6 outlines and discusses the challenges of restructuring debt under the CF and what steps could be taken to improve it, focusing on debt sustainability analyses, official creditor coordination, private creditor participation, policy conditionalities, the opportunity to make use of debt clauses and instruments targeting future resilience, and importantly the need for comprehensive restructurings to complement liquidity support and debt rescheduling. Section 7 concludes this study.

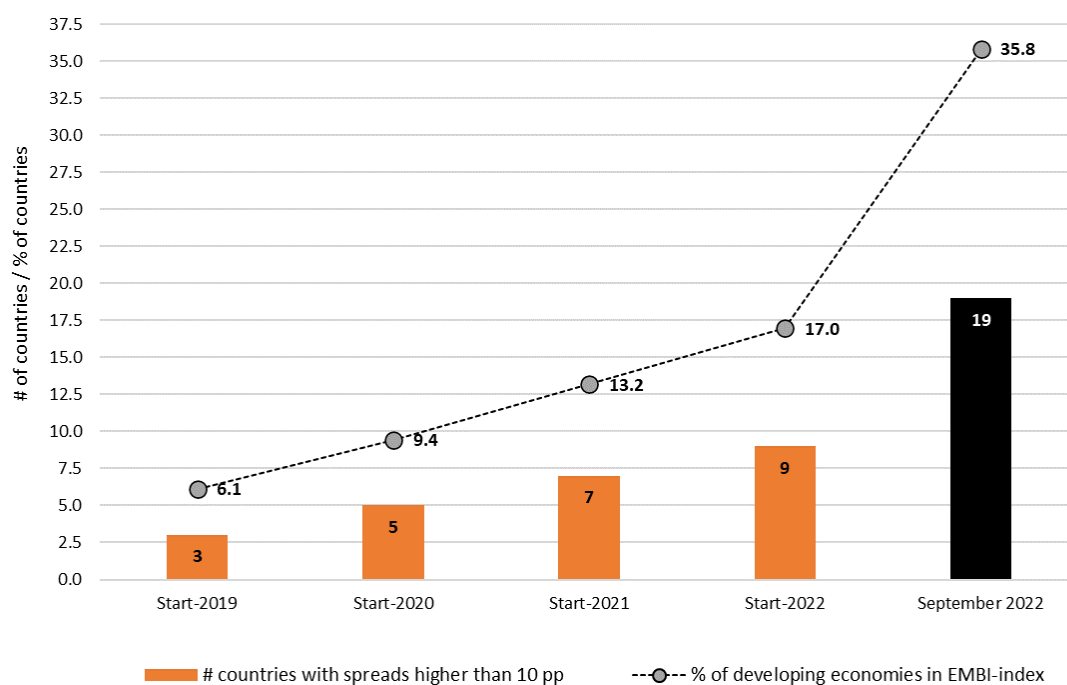
2. Debt vulnerabilities are intensifying

Funding conditions have deteriorated rapidly across developing economies (here defined as all low- and middle-income countries)⁴ since the start of the year and are likely to remain elevated as major market Central Banks (CBs) continue to raise interest rates (and shrink their balance sheets) to curb inflation, and other countries follow suit. Coupled with exceptionally high levels of economic uncertainty and a growing fear of a global recession, investors’ risk appetite is diminishing, and funds are withdrawn from markets perceived to have higher risks. The IMF reported in August of 2022 that cumulative outflows from emerging markets have been very large at about \$50 billion, a magnitude similar to the outflows witnessed back in March 2020 (IMF, 2022d).

The consequences across developing economies (DEs) have been rapidly rising interest rates and depreciating currencies adding further to debt burdens and already high inflation. Nineteen DEs, more than one-third of DEs included in the global emerging market bond index (EMBI Global), now have sovereign bond spreads to US Treasury bonds trading at more than 10 percentage points (pp) – effectively locking them out of international capital markets (Figure 1). In comparison, these figures stood at three countries (6.1 percent) at the beginning of 2019, five (9.4 percent) at the beginning of 2020, seven (13.2 percent) at the beginning of 2021 and nine (17 percent) at the beginning of 2022.

⁴ According to the World Bank’s income classification.

Figure 1: Developing economies with sovereign bond spreads higher than 10 percentage points (pp)



Source: Author based on data from Haver Analytics / JPMorgan's Global Emerging Market Bond Index (EMBI Global). Note: The index measures the spread of US\$ denominated debt to US Treasury bonds. 'Start' refers to first day of reporting in January and September is per 29 September 2022. In the start of 2019, spreads were reported for 49 developing (low- and middle-income) countries, and 53 from and including the start of 2020.

Similarly, of all DEs with a sovereign credit rating by at least one of the three major rating agencies, 26 countries, close to one-third, now have debt considered either 'substantial risk, extremely speculative or in default' up from ten countries at the beginning of 2020.⁵ Recently the major credit rating agency S&P warned that the repercussions of the war in Ukraine will continue to exert downwards pressure on credit ratings across DEs which could last beyond 2024 (S&P Global, 2022). Climate change vulnerability has also been found to have adverse effects on sovereign credit ratings, and data show that the majority of the world's most climate vulnerable DEs are also among the world's most debt vulnerable countries.⁶ Sri Lanka, the latest DE to have defaulted, now has its foreign-currency (FC) denominated bond debt trading at 27 cents to the dollar.⁷ Ghana, the latest DE to have

⁵ Using the average rating across the three major credit rating agencies (S&P, Moody's and FITCH). Ratings are translated to a numeric scale (see Appendix Table A2). Countries with an average rating below six (less than B3 for Moody's and B- for S&P and FITCH) are included in the category 'substantial risk, extremely speculative or in default'.

⁶ See for instance (Cevik & Jalles, 2020) and (Volz, et al., 2020) for an empirical analysis of the link between climate change and credit ratings, and (Jensen, 2021a) for a comparison of debt and climate vulnerable countries.

⁷ This is the market value (ask price times outstanding amount) of USD denominated bonds relative to outstanding amount as of 30 September, 2022.

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been downgraded (but not to default) by the major rating agencies, now has FC-denominated bond debt trading at 43 cents to the dollar.⁸

The total number of DEs suffering from severe debt problems obviously depends on the chosen definition. In this paper, included are first the DEs with a credit rating of either ‘*substantial risk, extremely speculative or default*’ (26 countries). Added to these are all DEs that do not have a credit rating but have a Debt Sustainability Assessment (DSA) risk rating of either ‘*in distress*’ or at ‘*high risk of distress*’ based on the latest country DSAs (23 countries).⁹ Finally, added are countries that do not meet the two ratings criteria above, but where sovereign bond spreads are more than 10 pp over US Treasury bonds (5 countries). In total this comes to (at least)¹⁰ 54 DEs with severe debt problems, which is 40 percent of all low- and middle-income countries (see full list in Appendix Table A1). Together the 54 account only for little more than 3 percent of the global economy, which makes debt relief a manageable task for the international community. Not providing the debt relief needed will come at great human cost, as these 54 countries account for close to 18 percent of the global population and more than 50 percent of all people living in extreme poverty.¹¹ The largest geographical subgroup among the 54 is Sub-Saharan Africa (SSA) with 25 countries followed by Latin America and the Caribbean (LAC) with 10 countries.

Historically, debt relief has come ‘too little too late’, with solvency problems initially often mistaken for liquidity problems leading to protracted debt crises with severe economic consequences. This has partly been due to unrealistic/overoptimistic expectations about growth and fiscal balances leading to an underestimation of further debt build-ups and the size of write-offs needed to restore debt sustainability.¹² An assessment of forecast vintages suggests that the public debt build-up in the IMF group of Emerging Markets and Developing Economies (EMDEs) has been underestimated over the past decade, with the forecast error in the five years leading up to COVID mainly driven by underestimating spending and overestimating revenue mobilization, as opposed to wrong assumptions/expectations about other debt dynamics including growth, interest, exchange and inflation rates (see Box 1 for details).

In late 2010, it was estimated that public gross debt as a percentage of GDP for the EMDE group would have fallen by 4.1 percentage points (pp) by 2015. Instead, it rose by 5.9 pp – a forecast error of 10 pp – reaching 37.4 percent. Similarly, back in late 2014 the debt ratio was expected to have grown by 1 pp by 2019 (the year

⁸ Ibid. Latest downgrades for Ghana were 23 September 2022 for Fitch and 5 August 2022 for S&P.

⁹ DSAs as per 29 August, 2022. See list at <https://www.imf.org/external/Pubs/ft/dsa/DSAlist.pdf>

¹⁰ Several countries are not included due to both missing credit and DSA ratings data. These include Eritrea, Libya, Syria and Yemen (Yemen’s latest DSA is from 2014).

¹¹ Poverty estimates (global and country) are taken from the [World Poverty Clock](#) by the World Data Lab.

¹² See World Bank (2022b) and Graf Von Luckner, Meyer, Reinhart, & Trebesch (2021).

before the COVID-19 caused expansion in debt).¹³ Instead, it rose by 14.1 pp – a forecast error of 13.2 pp – reaching 53.9 percent. The major contributor to the large increase in debt from 2014 to 2019 – and thus the forecast error - came from primary balance (PB) deficits rather than from other debt dynamics. PB deficits contributed 11.9 of the 14.1 pp increase in the debt ratio.

Box 1: Underestimating the debt build-up prior to the COVID-19 shock

In order to assess if the debt build-up since 2010 leading up to COVID-19 has been underestimated in the IMF’s group of EMDEs, public gross debt (as a percentage of GDP) forecasts are compared across IMF’s World Economic Outlook (WEO) October vintages for 2010 and 2014 and the later actual values (as reported in WEO April 2022). Furthermore, the change in the debt-to-GDP ratio is split into contributions coming from other debt dynamics (ODD), which include changes to growth, inflation, interest and exchange rates and contributions from primary balances (PB).

In the late 2010 forecast EMDE gross public debt (as a percentage of GDP) was expected to fall by 4.1 percentage points (pp) by 2015. Instead, it rose by 5.9 pp. Similarly, in the late 2014 forecast the debt ratio was expected to rise by 1 pp by 2019 but ended up rising 14.1 pp.

Period	Percentage point change in debt ratio
Estimated: 2010-2015	-4.1
Actual: 2010-2015	5.9
Estimated: 2014-2019	1.0
Actual: 2014-2019	14.1

Both PB deficits and adverse ODD contributed to the large increase in debt from 2014 to 2019, but with deficits as the main contributor accounting for 11.9 of the 14.1 pp increase.

The underestimation of debt has not been a consequence of ‘outliers’. In the October 2014 forecast it was estimated that by the end of 2019, 59 of today’s low- and middle-income countries would have a higher debt ratio by 5.2 pp for the median country. Instead, debt ratios rose in 99 countries and almost by 13 pp for the median country. Of 118 low- and middle-income countries with reported data, the October 2014 forecast expected 77 countries to have adverse ODD the following five years, adding 13.7 pp to the median country’s debt ratio. Instead, 63 countries turned out to have adverse ODD, adding 7.4 pp to the median country’s debt ratio. On the other hand, it was estimated that PB

¹³ According to IMF’s Fiscal Monitor, the group of emerging markets and middle-income countries (EMMI) added 10.3 pp to their debt ratio in 2020 (with a primary deficit contributing 7.53 pp), and the group of low-income developing economies (LIDC) added 6.1 pp (with a primary balance deficit contributing 3.55 pp).

developments would add to debt ratios in 30 countries with a median of 6.4 pp. Instead, it turned out that PB developments added to debt ratios in as much as 85 countries with a median of 7.3 pp.

Other studies have found similar results. As an example, based on IMF and Economist Intelligence Unit debt projections, Flores et al. (2021) find an average positive (realized debt higher than projected) forecast error of about 10 percent of GDP at the five-year horizon. It can also be noted that IMF's own independent evaluation office has found that growth outcomes under IMF-supported programs have consistently fallen short of program projections and that this growth over-optimism is mainly attributed to macro-modelling errors related to fiscal multiplier assumptions (IEO, 2021).

Source: Own calculations based on IMF WEO database. Note: Debt dynamics refers to changes in the debt-to-GDP ratio stemming from the different debt-creating flows, such as changes to the primary balance and 'automatic flows' stemming from changes to interest rates, GDP growth and exchange rates and the share of foreign versus local currency-denominated debt. Other debt-creating flows, such as privatization receipts, recognition of contingent liabilities (e.g., bank recapitalization), debt relief, etc., can also significantly affect debt dynamics, and usually debt dynamic analyses also include a residual variable representing changes coming from items such as sales or purchases of financial assets, 'one-off' factors affecting debt stock, changes to definitions of debt and fiscal balances, cross-currency movements, etc. In forecasts 'other flows' and residuals are usually considered zero.

COVID-19 caused a massive increase in debt on top of a rapid build-up dubbed the 'fourth wave of debt' (Kose, Nagle, Ohnsorge, & Sugawara, 2021). According to the IMF, in April 2022 the group of EMDEs added almost 10 pp to their debt ratios in 2020 reaching 63.9 percent of GDP. The debt outlook has sharply deteriorated since April, and at that time debt was already expected to grow fast reaching 66.3 percent of GDP this year, surpassing 70 percent by 2024 and 75 percent by 2027.

While new liquidity support and debt reprofiling is urgently needed for many countries to mitigate balance of payments problems and rollover risk, it is unlikely to be a sufficient solution for many others who will also need debt stock reductions (write-offs) to restore debt sustainability. Furthermore, fighting off inflation in large advanced economies could mean an end to a near-decade of large global liquidity injections by advanced economies' Central Banks, meaning that DEs could now be facing a future with structurally tighter external funding conditions causing budgetary problems as debt service costs rise. This is especially worrisome given the already high levels of debt vulnerabilities and distress, and also because of the massive funding gaps DEs need to plug to make significant progress on sustainable development including managing the urgent climate transition (OECD-UNDP, 2021).¹⁴ The situation and outlook puts an enormous pressure and responsibility on the multilateral system to coordinate and design adequate debt relief and to make available more affordable official sector resources to developing economies.

¹⁴ Before COVID-19 the total annual SDG financing gap for DEs was estimated to be at least US\$2.6 trillion.

3. Post-pandemic international debt relief initiatives have been insufficient

In response to COVID-19, the G20 in May 2020 initiated the Debt Service Suspension Initiative (DSSI) which offered the 73 poorest (International Development Association eligible) countries debt relief by allowing them to postpone debt service payments on official bilateral debt while urging private creditors to join in. The DSSI did not reach the level of relief expected – in part due to limited take up - and the initiative has now ended at a precarious time when many countries have shrinking foreign reserves and large gross financing needs.¹⁵

The G20 Common Framework for Debt Treatments (CF) was adopted in November 2020 with the aim of helping countries not only with protracted liquidity crisis, but also solvency problems (IMF, 2021b). To do so effectively, one of the main objectives of the CF has been to bring together the Paris Club and non-Paris Club official creditors. As with the DSSI, this is only open to the 73 poorest countries, thus excluding several middle-income countries (MICs) with debt problems.¹⁶

In August 2021 the IMF issued a historic US\$650 billion worth of Special Drawing Rights (SDR) providing a much-needed liquidity injection in many countries. But with more than two-thirds going to wealthy countries, with little or no need for additional reserves, this has been far too little for struggling DEs (Jensen, 2021a). Discussions followed, and are still ongoing, with respect to options for voluntary re-allocations from wealthy countries to countries in need. Best estimates suggest that the G20 so far has pledged US\$60 billion and with a global ambition of reaching US\$100 billion, but not a single recycled SDR has yet reached any low- or middle-income country.¹⁷

The major debt relief initiative on offer remains the CF with its attempt to offer distressed debtor countries an effective way of restructuring debt in a creditor landscape that has become increasingly complex. However, it has shown little progress to date with only three countries undergoing treatment and none of them having been able to conclude a restructuring more than 18 months after signing on.¹⁸ One major hurdle is how to ensure the participation and comparable treatment of private creditors (IMF, 2022b) and coordinate relief between ‘traditional’ and ‘new’ major official creditors. This, combined with a general lack of transparency on the total amount of outstanding debt and its contractual terms, greatly complicates restructurings and debt sustainability assessments (Horn, M. Reinhart, & Trebesch, 2021).

¹⁵ 48 of 73 eligible countries participated in the DSSI before it expired at the end of December 2021. The DSSI suspended a total of US\$12.9 billion of debt service payments from May 2020 till December 2021. Despite calls for the participation of private creditors only one private creditor has been reported to participate. For details see (World Bank, 2022a).

¹⁶ As an example, 16 of the 54 most debt vulnerable countries are not eligible.

¹⁷ The IMF has proposed recycling SDRs through the existing Poverty Reduction Growth Trust (PRGT) and the newly established Resilience and Sustainability Trust (RST) the latter of which is expected to reach a capitalization of US\$45 billion (IMF, 2022a). For details on commitments and the tracking recycled SDRs see Plant (2022) and Plant & Sala (2022).

¹⁸ Ethiopia, Zambia and Chad are undergoing debt treatment under the CF.

During the last major international debt relief initiative, the highly indebted poor countries initiative (HIPC) initiated in 1996, the 37 HIPC countries owed more than 90 percent of their public and publicly guaranteed external (PPGE) debt to official creditors. Today the former HIPC group of countries owes about one-quarter of their PPGE debt to private creditors. Considering data available for 46 of the 54 countries identified in this paper (including 21 of the former 37 HIPC countries), the total PPGE debt in 2020 was US\$782 billion with 53.5 percent owed to official creditors (Table 1). If excluding the relatively large chunks of debt from Argentina, Ukraine and Venezuela, the total PPGE debt was US\$552 billion with about two-thirds owed to official creditors and almost equally split between bi- and multi-lateral creditors. Although some MICs rely heavily on private creditors, most of the 54 countries still predominantly rely on official sector borrowing, which makes up more than 80 percent of PPGE debt for the median country (Appendix Table A1).

Table 1: PPGE debt composition for the group of most debt vulnerable DEs (US\$ billion).

PPGE debt (54 countries*)					
		Official		Private	
	Total	Multilateral	Bilateral	Bonds	Banks and other
US\$ billion	782	231	188	322	42
% of total		29.5	24.0	41.2	5.3
PPGE debt excl. Argentina, Ukraine and Venezuela					
		Official		Private	
	Total	Multilateral	Bilateral	Bonds	Banks and other
US\$ billion	552	189	178	149	37
% of total		34.2	32.1	26.9	6.8

*Source: Based on data from World Bank IDS 2022 database. Note: *Latest figures are from 2020 and the table includes figures for 46 countries with available data out of the 54 countries identified in this paper.*

It is not just the coordination with private creditors that is complicated. Under HIPC, most of the official PPGE debt was owed to the so-called ‘Paris Club’ of creditors. Today other non-Paris Club countries have also become major creditors adding another layer of complexity to creditor coordination. Most notably China has become the largest bilateral creditor to many of the poorest countries as part of its Belt and Road Initiative to fund infrastructure in DEs, and according to some estimates, since 2017, it has been the largest official creditor globally, larger than the World Bank and the IMF (Horn, M. Reinhart, & Trebesch, 2021).

While studies have shown that China has provided emergency funding to many of the most debt-vulnerable countries, they also suggest that many Chinese loans are not captured in the World Bank’s International Debt Statistics, and that governments disclose less debt to International Financial Institutions (IFIs) the closer they get to their debt sustainability thresholds.¹⁹ Hidden debt undermines debt sustainability assessments and

¹⁹ See both Horn, et al. (2021) and Brown (2022).

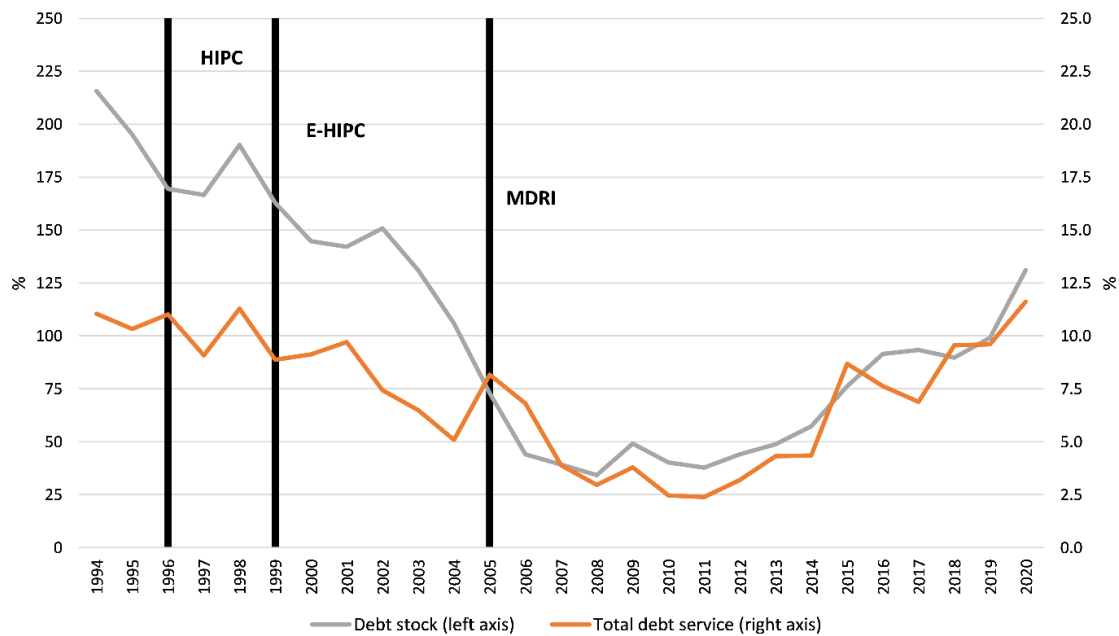
restructurings, and ultimately market confidence. It is, therefore, imperative that both debtor governments and creditors approach debt relief with full transparency, and especially that official China and the Paris Club (as major creditors) work together in providing effective relief, which was exactly one of the main objectives behind the CF. Using officially reported data to the World Bank, it can be noted that the shares of total PPGE debt for the group of 54 owed to official China and the Paris Club are 12 and 10 percent, respectively, but with large differences across countries (Appendix Table A1). As an example, 16 countries owe more than one-third of their PPGE debt to China and 11 more than one-third to the Paris Club.

Notwithstanding complicated issues of dealing with various creditors, countries could also be reluctant to sign on to the CF due to a general uncertainty on the process and outcome of the debt treatment in terms of its ability to restore debt sustainability and debtor-creditor relations. This hesitancy can be exacerbated by the fact that signing on to the CF is likely to result in a credit rating downgrade (FITCH, 2021). Another factor likely contributing to the hesitancy is an emphasis on debt relief through maturity extensions and interest rate reductions rather than face value reductions (World Bank, 2022b).

4. Past debt restructuring initiatives did little to prevent a rapid resurgence in debt burdens

HIPC was the last major international debt relief initiative. Though it was off to a slow start, it eventually provided significant relief, primarily through debt write-offs. HIPC was launched in 1996, enhanced in 1999 with the enhanced HIPC (E-HIPC), and finally supplemented in 2005 with the multilateral debt reduction initiative (MDRI). Under these initiatives a total of 37 countries were granted debt relief, 31 of which were from SSA, five from LAC and one from MENA (IMF, 2021a). HIPC, and the HIPC ‘add-ons’, contributed significantly to lowering the countries’ debt burdens. At the beginning of HIPC in 1996, total HIPC PPGE debt was hovering around 400 percent of HIPC exports plus primary income, and annual total debt service (TDS) on the same at more than 15 percent. By 2011 these ratios had dropped dramatically to around 65 and 2.4 percent, respectively, but then started rising rapidly with latest figures suggesting that the debt stock is about 200 percent and TDS back at 15 percent. Not surprisingly (given that 80 percent of HIPC-countries were from SSA), this pattern is also observable for the SSA region (excluding HICs) as a whole (Figure 2).

Figure 2: SSA (excluding high-income) PPGE debt (% of exports and primary income)

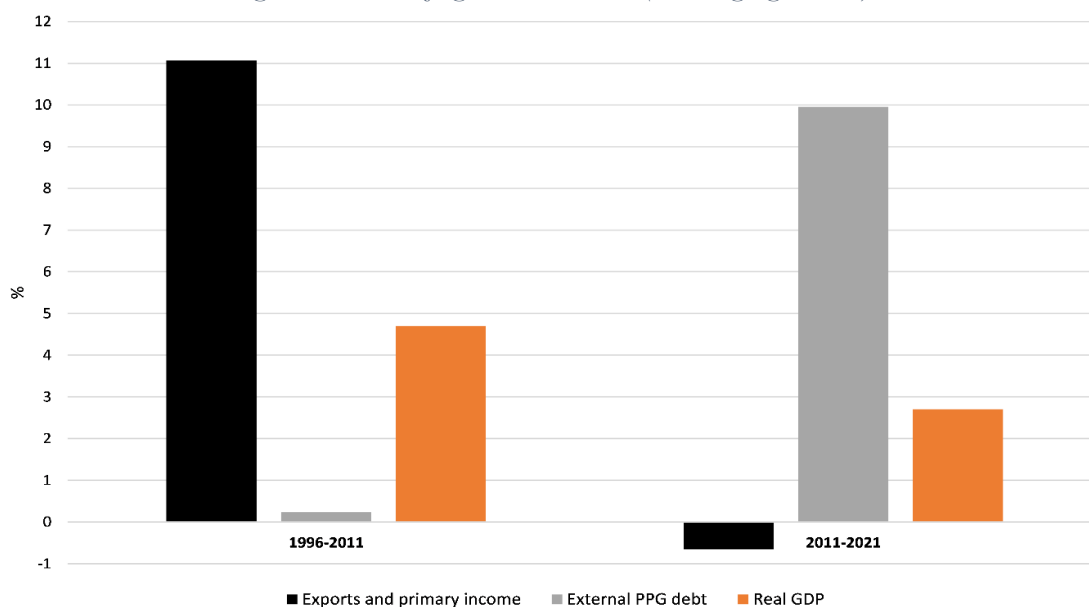


Source: Author based on data from World Bank IDS 2022 database.

At the beginning of HIPC the PPGE debt stock in SSA had reached around 215 percent of exports and primary income, and the TDS was around 10 percent. Fifteen years later in 2011, these ratios had fallen to 37.8 and 2.4 percent. Debt burdens, however, have again risen substantially. Latest figures suggest that the PPGE debt stock surpassed 130 percent in 2020 and TDS is back at a level last seen under HIPC at more than 10 percent. Clearly, HIPC did not prevent a rapid resurgence in debt burdens ‘post-HIPC’, but neither were (these) debt burdens in SSA ‘under HIPC’ reduced because of debt relief alone.

A major contributing factor, first to the reduction in debt burdens and later their resurgence, was export growth. Most African countries are highly dependent on commodity exports and around the time HIPC took off so did global commodity demand and prices. From the beginning of HIPC in 1996 to the peak of the latest commodity supercycle around 2011 ‘exports and primary income’ in SSA (excluding HICs) grew at an annual rate of 11 percent while growth in total PPGE debt was close to zero, and (real) GDP growth was 4.7 percent per annum (Figure 3).

Figure 3: Annualized growth rates, SSA (excluding high-income)



Source: Author based on data from the World Bank and the IMF. Note: The figure shows the nominal growth in exports and debt, and real growth in GDP. 2021 figures are calculated using IMF's (WEO April 2022) 2021 growth rates for exports and external debt for SSA.

Around 2011, when external debt burdens in SSA (measured relative to exports and primary income) reached their lowest levels, the nominal value of outstanding PPGE debt was close to what it had been at the beginning of HIPC, but now with exports and primary income almost four times higher. In other words, the entire reduction in debt burden ratios came through exports and primary income growth and not through a reduction in debt stock. After 2011 the opposite happened. In the period 2011 to 2021, exports and primary income grew at an annual rate of negative 0.7 percent while PPGE debt grew at a rate close to 10 percent per annum and (real) GDP growth slowed two full percentage points reaching 2.7 percent per annum.

5. State-contingent debt instruments can help improve debt management

While by no means a panacea for avoiding debt distress, one way of helping countries better manage economic volatility - often coming through external or exogenous channels – and reducing the probability of debt distress is to make use of state-contingent debt instruments (SCDIs). The current situation characterized by high economic uncertainty and need for debt restructurings has led some proponents to suggest that now is a good time to deploy them.²⁰

SCDIs have been proposed for years as alternatives or complements to traditional sovereign debt instruments to improve economic and fiscal resilience to shocks (Volz, 2022). While SCDIs will not be attractive/preferred

²⁰ See for instance Cohen, et al. (2020) and Volz (2022).

instruments for all countries and cannot substitute for sound fiscal management and reform, they have the potential to improve public debt management, especially in countries with high exposures to external shocks, such as from trade, financial flows or natural disasters and climate change. But despite the many theoretical benefits of SCDIs, they have not yet reached a significant scale, among other reasons due to low liquidity, issues of pricing and measurement of triggers.²¹ The current debt restructuring outlook and high level of economic uncertainty, however, offer an opportune moment for the official sector to support their use and act as ‘first movers’ (Cohen, et al., 2020). This can be accomplished, for instance, by supporting the standardization of state-contingency term-sheets and clauses, ensuring data credibility on triggers and/or incorporating SCDIs in official debt restructurings.

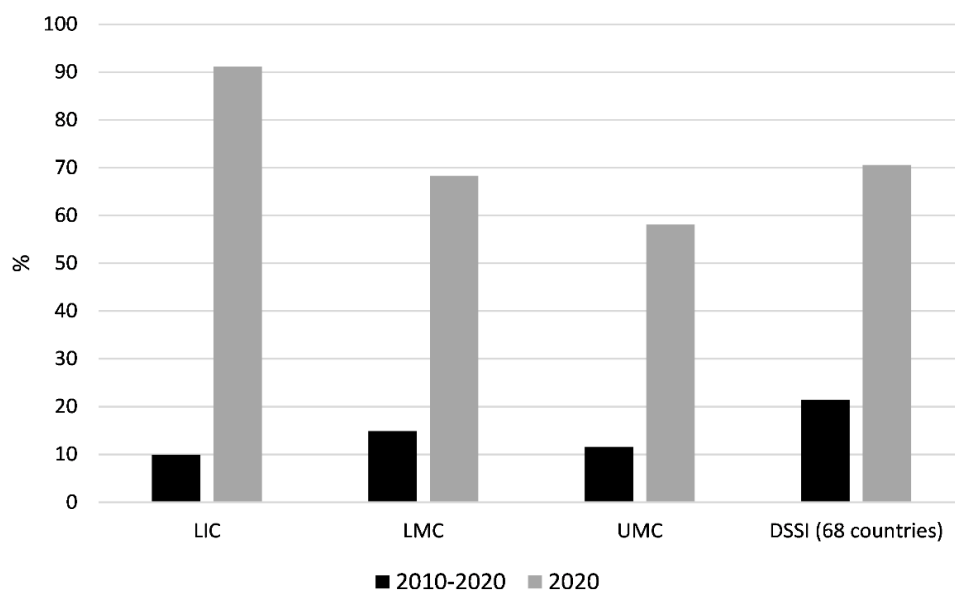
Based on a GDP-indexing scheme similar to the one in Warren-Rodriguez & Conceição (2015), this section includes a simple simulation of interest rate payments on PPGE debt under a GDP-indexed contract versus a non-GDP-indexed contract covering all official creditor debt and 50 percent of private creditor debt. Results are estimated for country income groupings low (LIC), lower-middle (LMC) and upper-middle (UMC) and covering the period 2010-2020. (Details can be found in Annex A).

Non-indexed interest payments are based on an estimated implicit interest rate. To get the indexed interest rate, a premium is added to the implicit rate equal to the difference between the given year’s real GDP growth rate and average growth over the four previous years, but with a cap limiting the premium during times of high growth to a maximum of 0.5 times the average rate. In that way countries are allowed to retain a larger share of the benefits accrued during growth accelerations/recoveries. A zero lower bound is imposed on the indexed rate, which during sharp slowdowns in growth could otherwise turn negative. Finally, the indexing ensures that following a period of negative growth, interest payments are only resumed when real GDP has recovered to the level prior to the downswing.

As the period 2010-2020 was generally marked by a growth slowdown, including the negative COVID-19 shock in 2020, total interest payments will be lower under this indexed contract. More specifically, interest payments over the full period would be lower by 10 percent in LICs, 15 percent in LMCs, 12 percent in UMC, and 21 percent if considering the group of 68 DSSI-eligible countries with available data (Figure 4). Interest payments in 2020, when COVID-19 hit, would be lower by 90 percent in LICs, 68 percent in LMCs, 58 percent in UMCs and 78 percent for the 68 DSSI-countries.

²¹ For an overview of the history, types, rationale and country examples of SCDIs, see Volz (2022).

Figure 4: Percentage reduction in total PPGE interest payments under GDP-indexing vs. non-indexing



Source: Author based on methodology and data sources described in Annex A. Note: 68 of 73 DSSI-eligible countries have data available in the IDS database.

For the full period, total interest payments for all low- and middle-income countries would have been lower by US\$114 billion equivalent to a 12 percent decline in interest payments versus a non-indexed contract (Table 2). This is more than half of what low- and middle-income countries received as part of the US\$650 billion SDR allocation in 2021. In 2020 alone, when COVID-19 hit, interest payments would have been lower by US\$69 billion. The DSSI scheme had the potential to free up US\$12.2 billion for the DSSI-eligible (poorest) countries in 2020 but was only used to the tune of about US\$3.2 billion.²² Under this indexing, interest payments in 2020 would have been lower by US\$10.7 billion for the 68 DSSI-eligible countries with data, or US\$8.3 billion lower if only official creditor debt had been covered by the indexed contract.

Table 2: Interest savings on external PPG debt under GDP-indexing, US\$ billion

	2010-2020			2020		
	Official	Private	Total	Official	Private	Total
LIC	1.3	0.1	1.4	1.9	0.2	2.1
LMC	23.1	14.9	38.0	13.1	11.4	24.4
UMC	24.5	50.2	74.7	11.9	30.8	42.7
Total	48.9	65.2	114.1	26.9	42.4	69.3
DSSI (68) eligible	15.4	3.4	18.8	8.3	2.4	10.7

Source: Author based on methodology and data sources described in Annex A.

²² This is according to the figures reported by the World Bank as per March 2022 (Bank, 2022). More specifically US\$3.2 billion is the sum of figures reported in the column ‘Estimated Deferred Debt Service in 2020’.

This indexing example, albeit simple, illustrates that SCDIs hold great potential in improving public debt management. Many other ‘contracts’ could have been simulated (and using other triggers than GDP). As an example, it can be noted that in Warren-Rodriguez & Conceição (2015), who only considered official PPGE debt, the indexed interest rate was allowed to turn negative on the part of borrowing from official creditors that was concessional. As the authors note, this can be interpreted as a provision of higher concessionality during sharp downturns, which could be achieved, for instance, by indexing not only interest but also principal payments. Alternatively, indexing of interest rate payments could be accompanied by indexing linked to principal maturities with the aim of reducing both payments and roll-over risk during times of excessive financial and economic stress.

6. A renewed international debt restructuring initiative

The CF in its current form has not delivered effective and timely debt restructurings. In its defense, it is facing a set of highly difficult circumstances. Global political tensions among major official creditors to DEs are high, and incentives for providing relief or full transparency on debt might not be aligned. At least three prerequisites are needed for achieving an effective debt restructuring. First, the major official creditors must be willing to work together – here most notably China and the Paris Club of creditors. Recent news from Zambia and Sri Lanka give reason for careful optimism on this front.²³ Second, both debtors and creditors must commit to full transparency on the amount of outstanding loans and terms, and debtors should seek restructuring earlier/preemptively. Third, to avoid a repeat of earlier debt crises and ‘a lost decade’, restructurings should not prioritize maturity extensions and interest rate reductions over write-downs when/if a DSA suggests that write-downs are needed to restore sustainability. Past major debt crises in the 1980s and 1990s were only resolved when the focus finally shifted to debt relief through write-downs, first with the Brady Plan and later the HIPC initiative.

The following elements are proposed as part of a renewed debt restructuring initiative building on the CF and led and coordinated by the Paris Club and non-Paris Club G20 members.

1. **Expand eligibility of the CF to cover all heavily indebted countries and suspend debt service payments while the debtor country is undergoing debt treatment** in good faith and maintain IMF’s lending into arrears policy. Both will act as an incentive for creditors to participate and to maintain a reasonable timeline, and it could also remove some of the hesitancy caused by rating fears for debtor countries.²⁴

²³ See for instance Economist (2022).

²⁴ See for instance IMF (2022e).

2. **Ensure that DSAs are grounded in realistic assumptions about countries' debt dynamics** including country-specific macroeconomic modelling parameters, spending needs and revenue mobilization capacity, and considering vulnerability and exposure to economic shocks, including from climate change. The aim should be to diagnose correctly whether a country's debt is sustainable, and if not, then estimate the appropriate size and type of debt treatment needed to restore sustainability. It is this central estimate that countries and creditors negotiate around. Where DSAs have established that a country has debt sustainability concerns, the focus should be on face value reductions over maturity extensions, grace periods, and rate-reductions to avoid subsequent rounds of restructuring and a protracted crisis. As an example, the IMF's Independent Evaluation Office (IEO) has concluded that debt operations with principal haircuts and upfront fiscal adjustments have been more effective in restoring debt sustainability and in providing the basis for renewed markets access and a return to growth over operations with just debt reprofiling and lower coupons (IEO, 2021). Based on their findings, the IEO, therefore, suggests that the IMF seeks to ensure ambitious debt operations upfront to address debt sustainability concerns to qualify for access to financing, and based on careful application of the recently modified DSA frameworks.
3. **Pay careful consideration to policy conditionalities**
 - a. ***Conditions for financial support:*** The IMF only provides financial support to countries if debt is assessed to be sustainable, or if it believes there is a credible way to restore debt sustainability, as laid out in the DSA. The credibility comes through financial assurances from major creditors and through 'strings attached' in the form of country commitments to reform through an IMF-supported country program. While reform is direly needed in some countries, conditionalities must pay more attention to the impacts on low-income and vulnerable groups especially when fiscal adjustments rely heavily on spending cuts.²⁵ A typical example, and one that is highly relevant given today's high energy and food prices, is the phasing out of broad-based subsidy programs. As costly and inefficient as these programs are, they are often the most significant social protection policy available to the poor. Phasing them out abruptly and without readily available alternatives targeted at low-income and vulnerable populations will increase poverty and inequality and can lead to social and political unrest.
 - b. ***Debt-for-development deals:*** At the global level, there is now a multitude of debt-for-development (DFD) swap proposals many of which are related to climate, nature and the environment. The idea is that creditors agree to debt write-offs in return for promises that the saved debt service payments are to be spent on nature conservation, or investments in climate

²⁵ This is also one of the conclusions from the Independent Evaluation Office of the IMF (IEO, 2021).

adaptation, etc. It makes a lot of sense to give debt relief to poorer countries so they can invest more in climate adaptation and mitigation. Not only have these countries contributed the least to, but bear the highest cost of, climate change, and there is a strong correlation between being climate- and debt-vulnerable.²⁶ As an example, 28 of the top-50 most climate vulnerable countries in the world are among the 54 countries identified in this paper (Table A1). Several issues must, however, be carefully considered. First is the need to allow countries sufficient flexibility to prioritize their sustainable development needs. Second, for a country struggling to repay its debt, forgiving some of that debt (or buying it back at a discount) may only free up a disappointing amount of fiscal resources for new climate (or other development) priorities.²⁷ Ultimately this will depend on the severity of the country's debt problems, the size and nature of the debt treatment, and whether the policy objective can take seniority over other payments including paying back creditors.²⁸ It is worth noting that generally DFD swaps have been small and have not had debt sustainability as their main objective.²⁹ They are therefore unlikely to work as an effective alternative to a comprehensive debt restructuring for countries with unsustainable debt, unless the development conditionality is tied to a comprehensive debt restructuring akin to HIPC (where large scale debt relief was granted in return for prioritizing poverty reduction). Thirdly, it is important to recognize that both swaps and more comprehensive restructurings will, at least in the short run, require that the official sector bear more of the post-restructuring credit risk. It is, therefore, again important that restructurings reestablish debt sustainability and do not just 'kick the can down the road', cf. point 2 above. Finally, debt relief alone will not be enough to free up the necessary resources for climate and sustainable development investments but should be viewed as an essential component of a multipronged strategy.

4. **Incentivize the participation of private creditors.** First, and as suggested in Gill & Buchheit (2022), it should be specified that creditors have a legal duty to cooperate in good faith in a CF restructuring once debt has been found to be unsustainable and the creditor has been invited to participate on comparable terms to other creditors. Second, incentives could be pursued through a combination of credit-enhancements (e.g., in the form of guarantee funds), buy-back or debt-exchange funds, and value

²⁶ See footnote 6 for references.

²⁷ For a good assessment of when debt swaps are likely to expand the fiscal space of the debtor see for instance Chamon, et al. (2022).

²⁸ For a good assessment of when it makes sense to use conditional grants, debt swaps, or restructuring to achieve policy objectives with or with unsustainable debt see Bolton, et al. (2022).

²⁹ As an example, the IMF still considers Belize's debt to be unsustainable after the (relatively) large debt-for-ocean swap concluded by the country in 2021. See IMF (2022c).

recovery instruments (VRIs). Under the Brady Plan credit-enhancements were used to incentivize private creditors (at that time mostly banks) to accept write-offs in return for guarantees on the collectability of the remaining debt.³⁰ Under HIPC, private sector participation in countries with substantial commercial debt was facilitated by the establishment of a buy-back fund providing eligible governments with grant funding to buy-back debt trading at deep discounts.³¹ The feasibility/effectiveness of using credit-enhancements and buy-back funds, however, increases the more distressed the debtor becomes, - and significantly after a default. As an example, the Brady Plan came after years of debt distress and protracted crisis coining the term ‘a lost decade’ (Sims & Romero, 2013). This probably increased the willingness of banks to agree to large write-offs as part of the Brady Plan, as many had already (internally) written off large amounts of their outstanding loans (Frenkel, 1989). The current environment of rapidly falling DE bond prices increases the relevancy and possibility of making use of credit-enhancements and buy-back measures. Value recovery instruments (VRIs) can also incentivize the participation of private creditors including their willingness to accept write-offs. These have been used before, albeit not at scale and with mixed success. The current case for using VRIs during large restructurings is strong as uncertainties about future macroeconomic outcomes are high, although VRIs will require careful design and avoid past mistakes to be useful (Cohen, et al., 2020).³²

5. **Use and support the development of SCDIs and expand the use of CACs.** There are many theoretical benefits of SCDIs, especially for countries that suffer from frequent external shocks, but the application and market for these instruments have been slow to develop. The current debt restructuring outlook, high economic uncertainty and a future with more frequent climate shocks makes now a good moment for the official sector to support the adoption of SCDIs and act as first movers, for instance by including SCDI-clauses in official debt restructurings. One problem with the former DSSI and now the current CF was and is a fear of being downgraded if signing on, and the difficulty of ensuring private creditor participation. SCDIs would ideally work by providing debt relief

³⁰ Under the Brady Plan creditors swapped bank debt for so-called ‘Brady bonds’ collateralized by US securities. Securities were funded by debtor countries themselves through their own contributions mixed with new loans provided by the World Bank and the IMF. A similar use of a partial guarantee fund has been proposed to deal with the current crisis in Volz et al. (2022).

³¹ The IDA Debt Reduction Facility.

³² VRIs work by reinstating/increasing debt repayments to creditors if certain economic (state) variables in the future improve beyond expectations (at the time of restructuring) thus giving the creditor a reward in a future upside scenario in return for debt relief today. In Cohen et al. (2020) the authors argue that to be useful in future restructurings VRIs should have the following features: i) The chosen state-variable(s) should be closely tied to the debtors repayment capacity and free of data-manipulation (doubt) ii) VRI payouts under upside scenarios must not be so large as to preclude the debtor from rebuilding buffers to withstand future idiosyncratic risks during good times, and iii) VRIs should be detachable to allow the restructured bonds to remain a fixed-income (and not an equity-like) instruments.

automatically (without discretion and breach of contract) and should thus not have any negative rating implications. It is also worth noting that SCDIs could take many forms. Besides working as a preventative mechanism by reducing the probability of debt distress, Cohen et al. (2020) also point out that SCDIs could be designed to facilitate the participation (and comparable treatment) of private creditors during a restructuring. For example, by setting the ‘trigger’ for private creditor debt service suspension to a predefined number of official creditors agreeing on suspension. As pointed out in Gill & Buchheit (2022) there is also a case for using upcoming restructurings to expand the use of CACs to cover all sovereign debt including syndicated loans which account for a sizeable portion of debt issued by DEs. This will help mitigate the problem of hold-out creditors and litigation, and better ensure timely restructurings with the participation and comparable treatment of private creditors.

6. **If funding remains a constraint, start with the most vulnerable countries** and expand eligibility conditional on additional funding. There is no way around the fact that an effective international debt restructuring offer will require additional funding from the official sector in the forms of concessional loans, grants, guarantees and/or specialized funds. Luckily, most of the severely debt vulnerable countries today are still relatively small in economic terms. There is a case for starting with the most vulnerable countries and expanding eligibility criteria contingent on additional funding. Here it is again important that the official sector insists on debt treatments deemed sufficient to restore debt sustainability given the country-specific conditions and challenges.

7. Conclusion

A serious debt crisis is unfolding across developing economies, and the likelihood of a worsening outlook is high. Despite several debt relief initiatives adopted since the start of the pandemic, the response to date has been insufficient. To avoid echoes from the past where debt crises spilled over to development crises, international efforts must urgently be stepped up. To mitigate and anticipate balance of payment problems there is a need for new additional international liquidity injections (and rescheduling of loans), preferably targeted at vulnerable countries. But for several countries, a comprehensive restructuring of sovereign debt is needed to restore debt sustainability. While the CF in theory provides a route to such restructurings – though only open to some countries – it has struggled to deliver results for the few countries that have signed on to date. In its defense, ‘working conditions’ are difficult, the responsibility of which lies with both creditors and debtors. Nevertheless, there are important adjustments that could be made to the current framework, which should enable the CF to deliver more effective, timely and resilient debt relief.

Finally, the international community needs to consider the possibility that the change in monetary policy stance by wealthy economies could mark an end to an era of relatively favorable external funding conditions on

international capital markets for DEs. If so, this will exert a longer-term upwards pressure on debt burdens and raise an important question of how DEs in the future can access more affordable and much needed development finance including climate finance, and what role official creditors can and should play in facilitating such access.

Appendix A – List of 54 most debt vulnerable countries

The top part of Table A1 lists the 54 countries identified in this paper. The 54 include all low- and middle-income countries with an average numeric credit rating (see Table A2) of less than six, or if no credit rating a DSA-risk rating of either ‘in distress’ or ‘high risk of distress’ or countries with sovereign bond spreads trading at more than 10 pp to US Treasury bonds. As examples, Chad, Somalia, Sao Tome and Principe and Zimbabwe have no credit rating, but all have a DSA rating of ‘in distress’ and are, therefore, included in the top part of the table. At the bottom of the top section are five countries all with an average credit rating of six or more, but with spreads trading at more than 10 pp. The table also includes nine ‘threshold’ countries which are countries just on the brink of being included among the most vulnerable as per their average credit rating. Finally, the table includes five countries with no (or no recent) DSA or credit rating. Here, it can be noted that both Eritrea, St. Lucia and Yemen have high debt levels, while recent debt data are missing for Libya and Syria.³³ In addition to spreads and ratings information, the table includes information on (public gross) debt level for 2021 (as a percentage of GDP), the US dollar value (in millions) of external PPGE debt, the share of total PPGE debt owed to official creditors and hereunder the shares owed to both China and the Paris Club, the percentage of population living in extreme poverty, and finally the country’s ranking on climate vulnerability (1= best, 182 = worst). As an example, Pakistan which was recently hit by a devastating flood has an average credit rating of 6 (‘highly speculative’), interest rate spread is higher than 10 pp and gross public debt is 74 percent of GDP. According to World Bank data, the country had PPGE debt worth US\$78.9 billion in 2020 with 86.6 percent owed to official creditors, 27.3 percent owed to China and 14.7 percent to the Paris Club. Six percent of the population in Pakistan is estimated to live in extreme poverty and the country ranks 147 (out of 182) on climate change vulnerability.

³³ It can be noted that St. Lucia has a credit rating from provider CariCRIS of CariBBB - equivalent to the BBB-category of Fitch and S&P and Baa for Moody’s.

Table A1: Summary table for the 54 most debt vulnerable DEs

	ISO3	Rating ¹	Spread > 10 pp ²	Debt (% of GDP) ³	PPGE (\$US Mil.) ⁴	Official (%) ⁵	China (%) ⁶	Paris Club (%) ⁶	Poverty rate (%) ⁷	Climate vulnerability rank ⁸
54 most debt vulnerable low- and middle-income countries	SOM	In distress	..	..	2,639	100.0	0.0	75.0	41	181
	STP	In distress	..	61.3	241	95.8	0.0	14.8	33	146
	TCD	In distress	..	58.2	2,945	57.3	10.6	5.7	41	179
	ZWE	In distress	..	67.6	4,577	90.6	35.9	26.9	43	159
	GRD	1.0	..	70.3	498	78.5	0.0	3.6	..	61
	LBN	1.0	Yes	135.0	33,359	5.8	0.0	0.4	..	86
	VEN	1.0	Yes	307.0	69,341	11.2	0.0	5.0	35	58
	BLR	1.3	..	41.2	20,270	82.4	23.6	41.1	..	26
	LKA	1.3	Yes	107.2	37,167	54.7	14.3	15.1	..	123
	ZMB	1.3	Yes	123.2	12,245	53.4	26.3	5.4	49	139
	SUR	1.7	Yes	125.3	..	..	..	..	28	72
	CUB	2.0	..	..	..	..	..	..	..	95
	LAO	3.0	..	95.2	10,393	83.9	51.9	7.1	10	145
	SLV	3.3	Yes	83.6	10,645	42.6	0.0	3.6	..	102
	UKR	3.3	Yes	49.0	41,519	33.6	0.0	3.7	..	55
	ARG	3.7	Yes	80.6	119,182	25.4	2.5	1.6	..	74
	ETH	4.0	Yes	53.0	29,016	77.6	21.6	4.9	8	164
	MLI	4.0	..	52.1	5,317	100.0	12.0	7.1	30	176
	GHA	4.0	Yes	81.8	23,322	39.4	6.2	5.8	10	119
	BLZ	4.5	..	111.0	1,408	58.3	0.0	0.0	20	111
	TUN	4.5	Yes	82.0	25,695	70.8	0.2	15.6	..	60
	COG	4.7	..	85.8	4,803	81.7	43.4	11.5	46	142
	MOZ	4.7	Yes	102.3	10,192	94.2	18.6	17.3	63	135
	BFA	5.0	..	50.7	4,023	99.7	2.2	5.1	35	156
	ECU	5.0	Yes	62.2	37,816	52.0	13.5	3.4	4	105
	SLB	5.0	..	16.5	124	100.0	0.0	0.0	26	166
	COD	5.5	..	12.7	4,496	97.0	15.0	5.3	73	173
	GAB	5.5	Yes	69.5	6,478	55.4	16.8	6.3	4	87
	MDV	5.5	..	123.4	2,843	69.6	31.4	19.0	..	143
	IRQ	5.7	No	59.4	..	..	..	..	19	99
	AFG	High risk of distress	..	..	1,958	100.0	0.0	44.7	19	169
	BDI	High risk of distress	..	68.6	493	100.0	2.8	8.0	81	160
	CAF	High risk of distress	..	47.6	447	94.4	5.7	20.1	71	175
	COM	High risk of distress	..	25.2	258	100.0	36.0	13.5	22	149
	DJI	High risk of distress	..	43.2	2,354	100.0	57.0	4.0	15	125
	DMA	High risk of distress	No	101.9	276	77.5	10.4	7.2	..	104
	FSM	High risk of distress	..	15.0	..	..	..	..	..	171
	GMB	High risk of distress	..	83.0	647	100.0	0.0	3.6	9	155
	GNB	High risk of distress	..	80.7	709	70.0	0.0	3.5	84	180
	HTI	High risk of distress	..	24.2	2,027	97.9	0.0	0.0	21	150
KIR	High risk of distress	..	17.6	..	..	..	..	..	..
MHL	High risk of distress	..	14.8	..	..	..	..	..	..
MRT	High risk of distress	..	54.7	4,211	100.0	8.1	8.2	5	165	
MWI	High risk of distress	..	63.5	2,237	100.0	10.5	6.1	50	158	
SLE	High risk of distress	..	76.2	1,278	85.4	4.9	5.9	38	163	
SSD	High risk of distress	..	58.2	..	..	..	..	84	..	
TON	High risk of distress	..	44.7	185	100.0	58.2	0.0	..	168	
TUV	High risk of distress	..	6.0	..	..	..	..	..	..
WSM	High risk of distress	..	49.6	394	100.0	39.1	8.6	..	128	
TJK	6.0	Yes	46.5	3,125	83.2	37.1	0.8	..	75	
PAK	6.0	Yes	74.0	78,893	86.6	27.3	14.7	6	147	
NGA	6.7	Yes	37.0	29,750	62.5	11.4	2.9	32	130	
EGY	7.3	Yes	93.5	98,857	63.3	3.7	12.2	5	100	
KEN	7.3	Yes	68.1	33,688	78.0	22.0	13.2	18	144	
9 "borderline" countries	AGO	6	No	86.3	47,144	47.2	76.2	6.1	44	131
	CPV	6	..	154.1	2,022	72.4	2.2	14.9	4	80
	KGZ	6	..	61.0	3,837	100.0	46.0	9.2	..	28
	MDG	6	..	53.4	3,514	95.8	4.6	8.0	59	162
	MDA	6	..	33.0	1,761	98.6	0.0	6.9	..	91
	NIC	6	..	48.6	5,899	99.6	0.3	8.3	..	103
	NER	6	..	52.9	4,031	94.6	7.9	4.4	41	182
	VCT	6	..	89.4	375	98.9	9.4	1.1	7	..
SWZ	6	..	42.8	557	98.2	32.1	9.5	34	136	
No data	ERI	No data	..	170.8	729	95.2	3.4	5.2	46	174
	YEM	No data	..	63.1	6,251	100.0	2.5	25.3	29	161
	LCA	No data	..	95.0	604	58.2	0.0	0.5	5	34
	SYR	No data	..	..	3,751	99.5	2.0	42.4	..	116
	LBY	No data	..	..	..	..	..	..	..	93

Notes

- Using average numeric rating across the three major rating agencies (see Table A2 for details). DSA-ratings are from latest country DSA.
- Haver Analytics / JP Morgan. Countries with a bond spread higher than 10 pp (as of September 29, 2022)
- General government gross debt from IMF WEO April 2022 (for the year 2021, except for for LBN and AFG where data is for 2020).
- External public and publicly guaranteed debt data is from World Bank IDS database 2022 and is for the latest reported year of 2020.
- Percentage of total external PPG debt owed to bilateral and multilateral creditors.
- Percentage of total external PPG debt owed to official China and the Paris Club. Paris Club here includes the 22 permanent member countries.
- Percentage of population living in extreme poverty (\$1.9 poverty threshold). Data taken from the World Poverty Clock by the World Data Lab.
- Ranked based on the climate vulnerability index from the University of Notre Dame's Global Adaptation Initiative. Vulnerability measures a country's exposure, sensitivity and ability to adapt to the negative impact of climate change. The index ranks 182 countries (Worst = 182).

Table A2 shows how the credit ratings from the three major agencies are translated to a numeric scale.

Table A2: Scale used to translate credit ratings to numeric rating

S&P	Moody's	Fitch	Numeric scale used	Description
AAA	Aaa	AAA	21	Prime
AA+	Aa1	AA+	20	High grade
AA	Aa2	AA	19	High grade
AA-	Aa3	AA-	18	High grade
A+	A1	A+	17	Upper medium grade
A	A2	A	16	Upper medium grade
A-	A3	A-	15	Upper medium grade
BBB+	Baa1	BBB+	14	Lower medium grade
BBB	Baa2	BBB	13	Lower medium grade
BBB-	Baa3	BBB-	12	Lower medium grade
BB+	Ba1	BB+	11	Non-investment gradespeculative
BB	Ba2	BB	10	Non-investment gradespeculative
BB-	Ba3	BB-	9	Non-investment gradespeculative
B+	B1	B+	8	Highly speculative
B	B2	B	7	Highly speculative
B-	B3	B-	6	Highly speculative
CCC+	Caa1	CCC	5	Substantial risks
CCC	Caa2	CCC	4	Extremely speculative
CCC-	Caa3	CCC	3	In default with littleprospect for recovery
CC	Ca	CCC	2	In default with littleprospect for recovery
C	C	CCC	1	In default with littleprospect for recovery
D	/	DDD	1	In default
D	/	DD	1	In default
D		D	1	In default

Annex A – GDP indexing of interest payments on PPGE debt

Indexing is based on a similar approach to Warren-Rodriguez & Conceição (2015), where the authors compare actual interest payments on PPGE debt owed to official creditors to payments under a simple GDP-indexing scheme for the period 2003-2014 in developing (low- and middle-income) economies. The indexing scheme is as follows:

$$(1) \quad i_t^{\text{index}} = i_t^{\text{implicit}} + [g_t - g_{t,t-4}^{\text{avg}}]$$

$$\text{if } g_t \leq 1.5 \times g_{t,t-4}^{\text{avg}}$$

$$(2) \quad i_t^{\text{index}} = i_t^{\text{implicit}} + 0.5 \times g_{t,t-4}^{\text{avg}}$$

$$\text{if } g_t > 1.5 \times g_{t,t-4}^{\text{avg}}$$

Where i_t^{index} is the GDP indexed interest rate, g_t , is the real GDP growth rate in period t and $g_{t,t-4}^{\text{avg}}$ the average growth rate of the previous four years. In Warren-Rodriguez & Conceição (2015) the implicit interest rate, i_t^{implicit} , is calculated as:

$$(3) \quad i_t^{implicit} = \frac{INT_t}{D_{t-1}}$$

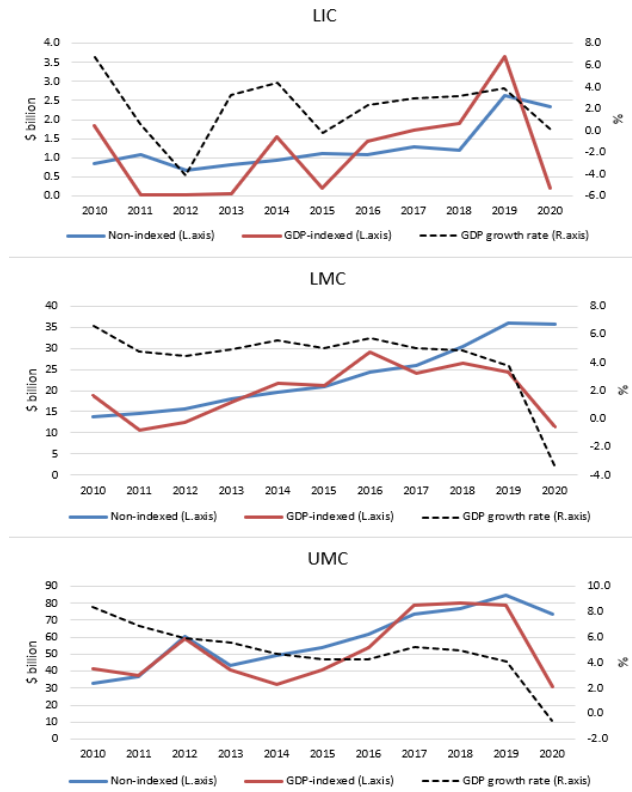
Where INT_t is interest payments in period t and D_{t-1} is the debt stock in period t-1. In the specification used in this paper an adjustment is made for rescheduled interest payments, INT_t^{Resch} , from the IDS database as in (4).

$$(4) \quad i_t^{implicit} = \frac{INT_t + INT_t^{Resch}}{D_{t-1} - INT_{t-1}^{Resch}}$$

Not doing so would likely underestimate the benefits of indexing during slowdowns, as interest rate rescheduling is highly and positively correlated with recessions. The same adjustment is not made for the implicit rate on PPG debt owed to private creditors, as data in IDS does not show how much of private creditor interest payments rescheduled are for PPG versus private non-guaranteed (PNG) debt. In addition, a zero-bound threshold is applied to the implicit interest rate. The indexing scheme covers all official creditor PPGE debt plus 50 percent of private creditor PPGE debt. As in Warren-Rodriguez & Conceição (2015), principal payments are not part of the indexing scheme but could be included as a provision of ‘additional concessionality’.

Figures below show interest payments under a non-indexed ‘conventional’ debt contract (blue line) versus the chosen GDP indexing contract (red line) and the GDP growth rate (black dotted line). Summary results are provided in Section 5 of the paper.

Figure A1: Interest payments on external PPG debt under indexing versus non-indexing



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