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Debt Sustainability Assessments & Their Role in the Global Financial Architecture

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Contents

Foreword	4
Introduction	
<i>by Sara Burke and Aldo Caliari</i>	6
Context	7
1. What are IMF and World Bank DSAs?	7
2. Upgrading DSAs for an era of large shocks	8
3. Aligning DSAs with sustainable development and climate goals	8
4. Making DSAs more transparent and accountable	9
5. The importance of enhancing the practice of sovereign DSAs	10
6. Conclusion	11
Chapter 1	
An Appraisal of Debt Sustainability Analyses Amid Multiple Crises	
<i>by Sherillyn Raga</i>	14
Summary	15
1. Introduction	15
2. Public debt sustainability and the relevance of DSA frameworks	16
3. Performance of DSA growth and debt forecasts	19
4. Limitations of DSA frameworks in the context of multiple crises	25
5. Conclusions	33
Chapter 2	
How to Ensure Debt Sustainability Accelerates Sustainable Development	
<i>by Matthew Martin</i>	42
Summary	43
1. Introduction	43
2. Adapting Debt Sustainability Analysis to the SDGs	44
3. Adapting Debt Sustainability Analysis to Combat the Climate Crisis	46
4. Adapting DSAs to Combat the Extreme Inequality Crisis	50
5. Overall Conclusions and Recommendations	52

Chapter 3

How Transparency Makes Debt Sustainability Analyses

a Trusted and Effective Tool

by Gail Hurley 56

Summary 57

1. Introduction 57

2. Transparency in DSAs: What are the issues? 57

3. Transparency in DSAs: the current picture 58

4. Ways forward 64

Chapter 4

The Practice of Sovereign Debt Sustainability Analysis

by Martín Guzmán and Joseph E. Stiglitz 68

Summary 69

1. Introduction 69

2. What is a DSA? 69

3. Debt sustainability in an environment of incomplete contracts 70

4. The key questions for a DSA 71

5. Misaligned incentives for timely restructurings 71

6. The elements of a DSA 71

7. Who performs DSAs? 73

8. Five issues with the IMF's DSA practice 74

9. Conclusion 78

Foreword

Debt sustainability is not just an academic construct—it is a living, breathing concern that shapes the decisions of finance ministers, central bankers, development practitioners, and international creditors every day. For those of us who have worked in the trenches of sovereign finance, whether in ministries, central banks, multilateral institutions, or the field of development policy, the question of how much debt is “too much” is more than a theoretical debate. It influences the space available for investment in public goods, the credibility of reform programs, the risk appetite of investors, and ultimately, the resilience of economies. The decisions we make based on assessments of a country’s debt-carrying capacity can shape the economic destinies of entire nations. And yet, the tool most often used to guide those decisions—the Debt Sustainability Assessment (DSA)—remains imperfect.

This volume brings together an impressive array of papers that examines the DSA methodology, its uses and misuses, and, importantly, how it can be improved. These papers arrive at a critical juncture. The global financial architecture is under strain. The COVID-19 pandemic, the inflation challenges that followed, and ongoing geopolitical tensions have created a perfect storm for debt vulnerabilities in many emerging markets and low-income countries. In this context, DSAs conducted by the International Monetary Fund (IMF) and the World Bank have gained immense prominence. These assessments are not just analytical tools. They act as gatekeepers of financial flows, shape policy conditionality, and define the scope of debt restructuring negotiations in cases where a country has defaulted.

The DSA was created with good intent: to provide a rigorous, forward-looking framework for assessing debt vulnerabilities and informing policy recommendations for the indebted country. Over time, it has grown into a central pillar of the international financial architecture. It guides IMF lending decisions—whether and how much should the IMF lend to a distressed country, conditions access to concessional finance, defines the envelope of resources available to a country with an IMF-supported program to service the claims to its other creditors, and guides the expectations of private and official creditors alike. In short, it is no longer just a diagnostic tool—it has immense real world policy implications such as determining whether a country’s creditors get bailed out or bailed in.

From my time inside the IMF—including four years as the head of the IMF division in charge of the DSA methodology and its implementation in country programs—I know the care and integrity with which the DSA framework was constructed and has evolved. Each revision of the DSA frameworks for low-income countries and market access countries introduces enhanced methodologies and rigor. The staff of the IMF and the World Bank deserve credit for having made significant advances in the conceptual and practical frameworks for assessing debt sustainability over the years since the DSA was first introduced.

At the same time, I also know my time as having helped design some of the DSA methodologies at the IMF, that no model can fully capture the complexity of sovereign risk. Making a correct assessment on debt sustainability that will stand the test of time is as much an art as a science. And from my subsequent experience as the Governor of Pakistan’s central bank, a high debt country, and now as an advisor to sovereigns, I have seen how DSA outcomes—when driven by assumptions that may not be fully aligned with domestic realities or methodologies that cannot capture the nature of the risks involved—can constrain options at the very moment when flexibility and judgment are most needed.

Moreover, even when the DSA produces the right outcome at a purely technical level, the politics around the implications of that outcome can lead to the DSA tool itself being stretched to accommodate these considerations. The staff of the IMF often succeed in resisting such pressures from the Executive Board or the senior management of the IMF. However, when the stakes are high it is difficult to protect the purity of the DSA. Ironically it is precisely in such high-profile cases where a wrong call from the DSA causes the most damage to its reputation.

A relevant example comes from the experience in Greece in the early 2010s. At the time, the DSA supported the view that the country’s debt was sustainable, allowing for official financing without the need for upfront burden-sharing from the private sector. But within months, it became clear that those assumptions were too optimistic—growth was weaker, political support was thinner, and the social strain far greater than projected. The DSA had underestimated the fiscal contraction’s macroeconomic feedback loops. It would

take a deep and painful private sector haircut, years later, to realign the debt trajectory with reality. In that case, the DSA framework did not just miss the mark—it delayed an inevitable restructuring and deepened the social cost of adjustment.

This book does an excellent job of identifying these and related fault lines in both the methodology and especially the application of the DSA. The papers highlight several important concerns: the ability of the DSA to correctly capture debt dynamics in a large shock—often the circumstances that lead to default, aligning the DSA with development and climate goals, making DSAs more transparent and accountable, and practical issues in the use of DSAs such as the different considerations related to the currency of debt, the appropriate discount rate, the IMF's own role, and related issues. In highlighting these issues, the authors are not calling for the abandonment of the DSA—they are calling for its evolution with concrete reform proposals.

One particularly relevant theme is the role a DSA end up playing in debt restructuring negotiations. In such circumstances, the DSA can effectively determine how much debt relief a country is “allowed” to seek and the extent of losses that creditors are expected to accept. This gives the framework enormous influence. It also often leads to creditors, particularly private creditors, to complain about the accountability or transparency in the formulation of the DSA and its underlying assumptions. As I saw first-hand in the cases of Greece and Ukraine in my time at the IMF, the interplay between politics, projections, and precedent can profoundly affect both the design of programs and the outcomes for populations. In those moments, the DSA becomes not just an analytical exercise, but a negotiation tool, a bargaining chip, and sometimes, a battleground.

From a practitioner's perspective, this book is essential reading. It bridges theory and practice, critique and solution. It invites the kind of open, honest dialogue that is urgently needed if we are to improve faith in multilateral frameworks and support better outcomes for countries navigating debt stress. For those of us working on the frontlines of fiscal policymaking and sovereign financing, these papers offer not just critique, but a compass—toward a better way of assessing, and achieving, debt sustainability. I hope this volume will inform and inspire a new era of debt sustainability analysis—one that is not only more accurate, but more equitable and fit for purpose in a world facing multiple, intersecting crises.

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Introduction

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Context

In the early 2000s the International Monetary Fund (IMF) and World Bank adopted methodologies to assess debt sustainability in low-income and in market-access countries. The IMF-World Bank debt sustainability analyses (DSAs) guide decisions on how much countries can borrow without risk of debt distress. For countries already in debt distress, they influence decisions on whether they need debt relief and to what extent.

DSAs are central to the global financial system and the characterization of debt crises. They are the barometer that measures when countries' debt burdens are excessive. For countries undergoing debt restructurings, DSAs impact decisions on whether debt relief goes deep enough to resume growth, meet development and climate goals and avoid extension or reemergence of debt vulnerabilities in the near term. In doing so, DSAs have implications for the interests of creditors, sovereign borrowers and their societies.

Debt sustainability is a probabilistic concept, and its analysis is subjective (Guzman 2018), so any chosen methodology is inherently bound to draw debate. It is thus no surprise that, since the very introduction of the IMF and World Bank methodology for assessing debt sustainability, a rich literature emerged voicing criticisms and ways to address them. Akyuz 2007, De Gregorio et al 2018, Alexander and Kappagoda 2004, Berg et al. 2014, Cassimon et al 2016, Rustomjee 2018, Guzman 2018, are just a few examples.

Since 2010, developing countries' debt burdens and vulnerabilities have been on the rise, a trend exacerbated by the pandemic, interest rate hikes and other shocks. At the same time, there is growing recognition of the huge financing gap those same developing countries face to meet sustainable development and climate goals. These two developments are building up to a crisis that has the international debt architecture under renewed scrutiny. The scrutiny involves both the methodological foundations and implementation of DSAs in practice, as well as the roles that institutions like the IMF play in them (Caliari forthcoming).

In the face of this moment Jubilee USA Network and Friedrich-Ebert-Stiftung set out to home in on which reforms could make the DSA a tool more fit to serve the pivotal role it will undoubtedly play in the international community's cooperation on debt crisis response and prevention. With a focus on drawing lessons from practitioners and in close work with staff from the IMF, World Bank and other organizations with expertise on DSAs, the project placed particular emphasis on feasible and readily implementable reforms. This introductory chapter summarizes findings

and recommendations emerging from research by a set of seasoned practitioners of the IMF/World Bank debt sustainability analysis framework.

In the following sections, the chapter explains what DSAs are and goes on to lay out in summary form the findings and recommendations emerging across each of four areas covered by the practitioners in their research.

1. What are IMF and World Bank DSAs?

Public debt sustainability analysis is instrumental in the IMF's role in country surveillance, policy advice and lending decisions. The IMF began a systematic approach of assessing public and external debt sustainability in both its IMF programme designs and Article IV surveillance in 2002, initially only in countries with significant market access (IMF 2002 and 2003). In 2004, a joint IMF and World Bank (IDA) proposal for the operational framework of DSA in low-income countries (LICs) was made on the basis of distinct issues between LICs and market access countries (MACs) (IMF and IDA 2004).

The debt sustainability frameworks (DSFs) for LICs and MACs are being regularly reviewed and enhanced. The DSF for LICs now being implemented jointly by the IMF and World Bank reflects the latest enhancements made during its review in 2017 (IMF 2017). Meanwhile, the latest IMF DSA framework for MACs – Sovereign Risk and Debt Sustainability Framework for MACs (MAC SRDSF or SRDSF) – was approved in June 2021, replacing the DSF for MACs in place since 2013.

The IMF's definition of sustainable public debt takes into account solvency, liquidity and political adjustment capacity.¹ These factors are reflected in the DSA frameworks for LICs and MACs, which contain the following common elements:

- **Macroeconomic framework** including projections of macroeconomic, fiscal and financial data that affect public debt indicators. These include projections on growth, inflation, interest, debt maturities, exchange rates, currency composition of debt, and the primary fiscal balance, among other variables that influence debt. They provide the ingredients to project **baseline debt ratios** (e.g., debt-to-GDP, gross financing needs²) for the DSA.
- **Realism tools** scrutinising the credibility of the baseline scenario and key assumptions underpinning it (e.g. fiscal multipliers) against excessively optimistic projections.

¹ Based on IMF definition, public debt can be regarded as sustainable when the primary balance needed to at least stabilize debt under both the baseline and realistic shock scenarios is economically and politically feasible, such that the level of debt is consistent with an acceptably low rollover risk and with preserving potential growth at a satisfactory level. IMF, "Review of the Debt Sustainability Framework for Market Access Countries," February 3, 2021.

² Gross financing needs are calculated as the sum of the primary deficit, debt service (interest and amortization), and realization of explicit and implicit contingent liabilities, less any interest revenue.

- **Risk assessment tools** to examine the sovereign and/or debt sustainability risks over identified time horizons. These generate mechanical ratings of risks.
- **Final DSA output** with summary or overall rating of sovereign risks and/or debt sustainability with commentary especially in cases where judgement brings in other factors and is used to override mechanical ratings.

Nevertheless, the LIC DSF and MAC SRDSF have distinct tools and coverage to examine debt sustainability. A key distinguishing factor between these two DSFs is the focus on external public debt, including on concessional terms, in the LIC DSF versus the SRDSF's focus on total (domestic and external) public debt.

2. Upgrading DSAs for an era of large shocks

In her chapter, Sherilyn Raga looks into the relevance of specific features of IMF/WB DSA frameworks in the context of large and multiple shocks. Her study aims to determine to what extent the DSA projections have been useful in the past decade (2011–22, including the recent Covid-19 and Russia-Ukraine war), and offer areas for improvement to enhance DSA frameworks.

Based on a review of literature and five case studies, Raga's observations are the backdrop to an examination of the limitations of the DSA frameworks. She recommends four areas of reform aimed at improving the fitness of DSAs to the context of shocks.

First, recognize growing commercial sources of debt in LICs. Forecast errors have been consistently wider in LICs than in MICs. This may be a result of the assumption in the LICs DSF that the countries it covers secure most of their financing from external sources under concessional terms when, in fact, in the last two decades their use of commercial sources has grown significantly. Raga argues that key features of the MAC SRDSF may be equally appropriate for the LICs DSF: using the nominal value of total debt as an indicator of solvency, near- and medium-term liquidity risk assessment for changes in risk premia and potential capital outflows associated with the behaviour of the non-official debt profile during shocks.

Second, account for appropriate fiscal multipliers. While fiscal multipliers are a realism tool in the DSA framework, this means they are applied after baseline scenarios have been projected. Such use does not provide information on how relevant multipliers can account for the feedback effects of fiscal policy within the baseline scenario. In addition, fiscal multipliers are only considered in terms of the contractionary effects of fiscal adjustment. Thus, the

framework loses the capacity to evaluate fiscal multiplier effects that can vary by the direction of policy intervention (i. e. contractionary vs expansionary), the type of instrument used, the current stage of the business cycle and the country context. For instance, spending on high-quality public investment and high-multiplier sectors (e.g. health, social protection, infrastructure) can aid growth during recessions and recovery after shocks. The LIC-DSF takes into account the growth-investment nexus but only in terms of how public investment contributes to capital, and not its economy-wide productivity effects.

Third, activate and consistently apply an extreme shock scenario when a large crisis arises. As witnessed in the recent global crises (the global financial crisis, the Covid-19 pandemic), large shocks have protracted growth effects many years after a crisis. The DSA frameworks' extreme shock scenarios fell short of estimating the realised growth shocks from Covid-19 and lack longer term debt sustainability risk assessment for prolonged output losses. Raga finds that with an extreme shock scenario the DSA can serve as an early warning tool to assess the largest shock that could be tolerated before debt becomes unsustainable, and therefore be an early trigger for commercial debt reprofiling or other remedial actions.

Fourth, provide supplementary guidance on the use of judgment³ in the face of large global shocks. The DSA exercise inevitably requires judgement, especially in the context of multiple crises. Looking at a Ghana case study, Raga considers it counterintuitive that as late as 2021 the DSA encouraged maintaining a high level of market access amid worsening market sentiment, when securing concessional and longer-term loans might have helped ease liquidity and rollover risks before they materialised in 2022. A 2023 DSA projects a large fiscal adjustment of 5 per cent of GDP in two years, contradicting IMF advice on the benefits of undertaking a more gradual adjustment during high-multiplier crises.

3. Aligning DSAs with sustainable development and climate goals

Matthew Martin's chapter examined areas of reform to improve DSA alignment with the Sustainable Development Goals and Agenda 2030.

He points out that efforts to include the SDGs in debt sustainability analysis can build on the experience of countries that successfully costed Millennium Development Goals in the past (e.g. Bolivia, Burkina Faso, Rwanda and Tanzania). Estimated global costings and methodologies for country-specific costings for all of the SDGs also exist today. However, amidst "polycrisis" and with only seven years

³ Judgement in DSAs is considered by IMF and World Bank to have an important role in LIC and MAC DSAs. Both institutions write that "guidance" will be provided for the application of staff judgments but have also acknowledged that there is room for improvement. See: <https://www.imf.org/en/About/FAQ/mac-dsa> and <https://ieg.worldbankgroup.org/evaluations/world-banks-role-and-use-low-income-country-debt-sustainability-framework/chapter-2-low>

to go to reach the SDGs, directly integrating the spending needed to reach all of the SDGs would lead to unsustainable debt levels for virtually all countries. A way to address this conundrum would be for countries to prioritise which SDGs they wish to include.

The paper recommends a focus on prioritising the adaptation of the DSFs to the climate and nature emergencies, and extreme inequality and poverty.

In regard to climate and nature, the SRDSF already prescribes forecasting long-term scenarios related to climate change adaptation and mitigation for some countries, and both the SRDSF and the LIC-DSF include natural disaster “stress tests” in their methodology.

Martin suggests a number of improvements: broadening the (now relatively low) country coverage; calculating spending needs more accurately and including them in forecasts from year one of the projection – as opposed as from year six; including the potential positive impact of just green transition spending; combining the multiple impacts of climate into one scenario; including the other environmental goals to prevent nature collapse; linking up the implications of climate-adapted DSFs to other IMF processes such as indicative spending floors and country lending eligibility; and giving more weight to climate module results in the overall DSA risk assessments.

There has been less progress on adapting DSFs to the key types of spending which will confront the extreme inequality and poverty crisis. Martin finds that it would be very easy to replicate for key anti-inequality spending what has already been done to integrate climate spending. In particular, it would be easy to define the types of spending to include in an additional module or sub-modules, using an extended standard baseline scenario, and to define the country groups in which this should be done. Accepted estimated costs exist for the key sectors to be included, which could “pre-populate” a template. Where necessary (i.e. where costs are very high) the methodology could use customised country-specific scenarios analysing costs and potential sustainable financing sources in more detail (for which clear and simple methodologies exist). It would be feasible – and essential – to include the major positive impacts on growth which reducing inequality would have. Given that studies suggest a global pandemic is likely once every decade, a pandemic “stress test” should be included in both SRDSF and LIC-DSF.

Martin emphasises the need for scenarios that recognize that spending on climate, nature and anti-inequality sectors has immediate and longer-term positive impacts and multiplier effects on growth. The scenarios also need to capture the impacts of increasing sources of finance which create no – or highly concessional – additional debt (tax revenue, grants, concessional loans and debt relief). He calls for more realistic baseline scenarios that take into account the major negative effects on growth of growing

climate and pandemic disaster events, as well as the permanent effects of more gradual climate impacts such as desertification/drought and sea warming. Improved baseline scenarios would also account for the effect of inequality on undermining growth, he argues, but currently, these effects are not incorporated.

By taking such an approach, it is possible to prevent alignment of the DSA framework with SDGs from becoming reinforcing evidence to the view that climate and anti-inequality spending on the scale needed to reach the SDGs will dramatically worsen debt sustainability and increase debt risks. The clear message emerging from revised DSAs with climate and inequality modules should be similar to that proven successfully during 2010–2015 with the Millennium Development Goals: low- or no-cost financing plus major multiplier effects can allow us to reach the top priority SDGs and confront the climate, nature and inequality crises without provoking a widespread debt crisis. Their aim should be to assist countries in arguing the case for mobilising more concessional financing or debt relief and accelerating their efforts to collect progressive tax revenue.

Inevitably, the likely initial impact of large extra amounts of spending (before positive multipliers, extra tax revenue and concessional flows kick in), will be to increase debt ratios. To ensure that the SDGs are not sacrificed to keep debt levels sustainable, Martin argues in favor of keeping country debt burdens as low as possible and avoiding the sort of rapid rise in debt-service ratios that over the last decade crowded out SDG and climate spending. To make this possible, and to accelerate the provision of debt relief where needed, much more emphasis must be placed in interpreting debt sustainability on the liquidity burden of debt service – and with just as much emphasis on external as domestic debt service – than has been in previous iterations of the DSF. This could be done by making debt service/budget revenue the primary risk indicator in interpreting DSA results. Moreover, Martin proposes an indicator showing the ratio of debt service to climate and/or anti-inequality spending (for which data exist, as Debt Service Watch shows), which could help measure in DSAs the risk that high service is crowding out key SDG spending.

4. Making DSAs more transparent and accountable

Gail Hurley’s contribution examines the transparency of DSAs across three key pillars: public disclosure, data and methodology openness, and engagement processes.

Some important steps over the years improved transparency in DSAs, including better public disclosure, initiatives to upskill various stakeholders in the frameworks, and strengthened external engagement. However, Hurley identifies a number of weaknesses and makes transparency recommendations to help drive continuous improvement, foster trust and confidence, and enable better policy advice.

The first recommendation is to establish a ‘presumption of public disclosure’ in all DSAs. Since DSAs are meant to inform new borrowing by decisionmakers, including elected parliamentarians, the information they contain should be in the public domain and restrictions on disclosing information should be extremely limited and based on evident public interest. This would militate for erasing differences between public disclosure policies as currently applied to market-access countries and low-income countries. Public availability should also apply to the underlying data sets so external stakeholders can scrutinise data and assumptions.

Other measures could make DSAs more accessible to non-specialised stakeholders, particularly at the national level where DSAs are most important but are often underutilised. This recommendation goes beyond publication on a website and refers to what stakeholders are able to interpret with the information they access. Steps to make DSAs more ‘user-friendly’ could significantly drive accountability, particularly at the borrower country level.

Some reforms to improve accessibility are: adding an up-front table which summarises the main macroeconomic and debt assumptions underpinning the DSA and have been used to arrive at the overall risk level; better availability in local languages, and much better signposting on the IMF and World Bank’s websites as to where different language versions may be available; simplify access to historical DSAs, so interested actors can easily scrutinise past DSAs and understand what the documents ‘got right’.

Second, Hurley pinpoints the need for more transparency regarding the institutions’ confidence levels in the quality of the data being used to formulate DSAs. Understanding where there may be concerns around data quality is crucial since DSAs are meant to inform policymakers’ decisions to enter into new loans. Yet readers are not alerted to potential concerns around poor quality data. A potential scorecard or traffic-light approach, similar to that employed in the Debt Management Performance Assessment (DeMPA) diagnostic tool, could address this concern by alerting the reader to whether or not the data is considered high quality and complete. Indicating in the DSAs whether the country’s debt data is in compliance with the World Bank’s Debt Reporting System could help to incentivise and raise standards in debt reporting by borrowing countries. The automatic publication of borrowing countries’ DeMPA assessments, most of which are not currently publicly available, would reinforce those measures and, as with DSAs, Hurley recommends DeMPA reports enjoy a “presumption of disclosure.”

Greater transparency is needed around the use of judgement versus the mechanical model. This is particularly important in a context of increased volatility and uncertainty due to climate change and other risks, which may lead, in turn, to the need to employ ‘judgement calls’ more frequently. While the most recent MAC SRDSF review acknowledges previous transparency concerns around

the use of judgement, it still allows judgement calls to be partially deleted prior to publication. Hurley recommends the use of judgement in all DSAs must be clear, with more detailed descriptions of the use of judgement oriented towards non-specialised audiences. A common set of issues that may (or may not) require the use of judgement include climate change, environmental disasters, political or institutional instability, conflict and insecurity, and access to concessional finance. Improved guidance to staff on the use of judgement when these sets of issues arise could help to better standardise their use in DSAs, while strengthening transparency.

Third, dialogue and engagement with external stakeholders are essential to foster trust and drive improvements to the frameworks but can only really be seen as effective when there are meaningful feedback loops in place. In this regard, it should be clear to external stakeholders how their research and policy advice are being used and acted upon.

While these measures will contribute to making DSAs a more transparent and trusted tool, DSA transparency should be seen in a wider context of increased efforts by both borrowers and lenders to put enhance transparency throughout the whole borrowing cycle. In this regard, the author notes a number of initiatives aiming to do this, such as UNCTAD’s, AFRODAD’s and EURODAD’s voluntary guidelines which set out what responsible – and transparent – behaviour looks like when it comes sovereign borrowing and lending.

Finally, Hurley addresses concerns around the perceived or actual influence of political pressures on assessments and argues they are only likely to be fully addressed once there is confidence that DSAs are truly independent and impartial assessments. While transparency can mitigate those concerns, it will only go so far. The Bretton Woods Institutions have the requisite skills to carry out such technical assessments, but there is also a strong case that they should be developed by an institution (or institutions) without clear conflicts of interest.

5. The importance of enhancing the practice of sovereign DSAs

In their chapter, Martin Guzman and Joseph Stiglitz analyse the practice of DSAs, with a focus on the frameworks in which the practice occurs, the implications of the choice of assumptions, and the consequences for debt negotiations. They identified five key areas of reform that could improve the practice of IMF DSAs.

First, while sovereign debt restructurings most often occur in the context of a program with IMF financing, a country may choose to restructure without resorting to IMF financing. In such cases, the borrower can still request Technical Assistance on debt sustainability analysis to the IMF (a form of a stand-alone DSA).

The IMF-produced DSA can be important to influence creditors' expectations and bargaining power, as well as domestic political economy dynamics. The timing of the DSA and its publication is also relevant, and the authors argue the IMF DSA's impact is linked to whether it enables earlier involvement of the society in the debates about debt negotiations. For this, it would be better if it does not need to wait until an IMF-supported program is approved by the Executive Board.

The second issue is dealing with the IMF's own role as a large and senior creditor. In cases where exceptional access criteria (lending in large amounts) apply, the DSA needs to assess that the country's access to credit markets to roll-over existing debts and repay the Fund is likely to be regained.

This creates a dilemma for the IMF because, realistically, private creditors may not be willing to provide any financing when they see a large outstanding debt stock with short maturity with the IMF – given its preferred creditor status. So the IMF has to assume no market access until its exposure goes down, but also has to stand by its own plans to lend more to a country in that situation.

In extreme cases, the only debt operation that restores debt sustainability might be one where either the debt with the IMF is restructured or the IMF changes its lending terms, for instance extending maturities. However, neither of those options is a prerogative or decision of the staff. The way the IMF deals with these situations is usually by making heroic assumptions about the prospects of market access, to create a pretence that it is meeting its own rules.

Thirdly, the authors tackle the treatment of foreign vs domestic currency debt. The debt-to-GDP ratio, the gross financing needs (GFN) to GDP – with the intention of limiting rollover risks – and the ratio of foreign exchange debt service to GDP or to exports, are thresholds typically included in IMF DSAs. For “market access countries” the thresholds refer to the entire stock of public debt (both in local and foreign currency debt), which affects incentives in debt negotiations. Holders of foreign currency debt push for domestic currency debt to be the variable of adjustment, but the authors find that these types of debt are disparate kinds of assets that have to be assessed under different frameworks. For instance, pooling different debts under the same measure of GFN creates problems, given that the capacity to rollover different debts is different.

How the principles that guide debt restructuring processes treat these different assets bears practical consequences in both the short and long term. They may affect the development of domestic capital markets and thus affect their capacity to borrow in domestic currency in the future, with consequences for currency mismatches, exchange rate instability, and debt sustainability.

Fourth is a thorny issue that often sees creditors and debtors in disagreement: the discount factor to assess the value of debt payments after the restructuring.

A DSA is supposed to lead to restoring sustainability and a low probability of default ex-post, i.e. after the restructuring. If this is the case, the discount factor to assess the present value of the newly-issued debt instruments – the “recovery” for the creditor – should be close to the risk-free rate. However, the authors find that in practice this rarely happens. Creditors insist on using discount factors in accord with standard credit rating categories. As a result, the IMF often ends up using interest rates that are too high for a sovereign that allegedly returned its debt to a sustainable level. Unduly high discount factors result in an overestimation of the debt write-down the borrower receives, which may be small or even inexistent. If the discount factors need to be that high, that should be a signal that more debt relief is necessary to make debt sustainable with sufficiently high probability.

Finally, Guzman and Stiglitz address the issue of overoptimism in IMF DSAs baseline growth scenarios. Such projections contribute to “too-little-too-late” sovereign debt restructurings and allow for IMF lending in situations that might otherwise warrant an assessment of unsustainable debt.

However, the authors discuss underlying dynamics that, unless addressed, make overoptimism all but inevitable. As creditors press for limiting principal write-downs and interest rates, if IMF staff are sound in their analyses and realistic in their assumptions, their DSA may make a deal with other creditors much harder to reach. On the other hand, by being less realistic and facilitating an unsustainable debt deal they will be blamed when, a few years down the road, another restructuring is required.

6. Conclusion

According to the UN, the investment gap for developing countries to meet global challenges and additional Sustainable Development Goals ranges between \$2.5 and \$4 trillion (United Nations 2024). In order to open the fiscal space for such investments, the international community will need to find a path to address historically high debt burdens and vulnerabilities.

Recognizing the important role that IMF/World Bank DSAs will play in such endeavour, the research in this publication maps a series of feasible reforms to their methodology and implementation. They fall into four categories: upgrading DSAs to respond to an era of large shocks; aligning them with sustainable development and climate goals; making them more transparent and accountable; and enhancing their practice. We believe that, together, they constitute a powerful package to make DSAs sharper and much more effective at preventing, diagnosing and guiding remedial action for debt crises, while supporting development finance needs.

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Chapter 1

An Appraisal of Debt Sustainability Analyses Amid Multiple Crises

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Summary

IMF growth and debt forecasts have been optimistic across low- and middle-income countries (L&MICs) in the past decade (2011–22), with greater optimism in low-income countries (LICs). Forecast errors significantly widened during the recent overlapping shocks of Covid-19, the Russia-Ukraine war and global financial tightening. Case studies suggest that optimism in public debt forecasts in debt sustainability analysis (DSAs) reports may be driven by underestimation of the contractionary effects of fiscal adjustment on revenues and growth. Meanwhile, Ethiopia's case presents consistent pessimistic expectations on debt-reducing effects of growth, potentially due to underestimation of expansionary effects of productive public investment.

In the context of large global shocks, four areas might have contributed to the DSA frameworks' (DSFs') weak forecast performance. First, the disproportionate optimism in LICs highlights the limitations of the LIC-DSF in accounting for fiscal and debt risks associated with LICs' growing commercial sources of debt. Second, the DSFs for LICs and market access countries (MACs) neglect the feedback effects of fiscal policy on output (i.e. fiscal multiplier) in baseline projections. Economy-wide productivity effects of public investment are also absent. Third, the DSFs lack a stress-test scenario for large shocks with scarring effects, which, if provided, could help trigger early action to prevent debt distress. Finally, judgement has rarely been heightened during recent shocks, and policy advice on risks related to debt profile seems to vary depending on the current stage of the business cycle.

Automatically activating and consistently applying targeted fiscal multipliers in an extreme shock scenario and exercising more careful judgement in DSAs when large shocks arise might help guide governments to employ a more appropriate policy mix (beyond fiscal consolidation) to achieve an economic recovery that is compatible with sustainable debt and provide more confidence to financing institutions to extend countercyclical and targeted financing to support such a policy mix.

1. Introduction

If managed well, public debt can facilitate economic and social development. It can enable long-term investment such as in investment infrastructure and technology, help deepen financial markets by providing less risky financial instruments, and finance counter-cyclical measures in times of shocks. However, elevated levels of public debt bring risks, including increased vulnerability to shocks, susceptibility to banking crises, and the diversion of resources from productive uses to debt payment obligations (IMF 2022a; Koh et al. 2020; Kose et al. 2020).

In the extreme case of debt default, collateral damage to the economy can be significant – from loss of market access, higher borrowing costs (with potential persistent effects), reduction of private lending, and expensive lawsuits (Ams et al. 2020; Borensztein and Panizza 2008; Cruces and Trebesch 2013). The opportunities and risks associated with public debt compel an assessment of its sustainability.

The debt sustainability analysis (DSA) applied by the IMF to market-access countries (MACs) and by both the IMF and World Bank for low-income countries (LICs), serves as a vital input to policymaking and facilitates countries' access to international financing. Both IMF and World Bank staff utilise DSAs to inform their macroeconomic surveillance and analysis and the policy advice that they give to governments (IMF 2018). In turn, the DSA may influence government decisions on the level of their borrowing and spending to keep the public debt on a sustainable path – with such decisions having macroeconomic, sectoral and distributional impacts.

In addition, DSAs are utilised as a guide to determine countries' access to IMF and World Bank financing. For instance, when a DSA results in an assessment that a country's debt is unsustainable, the IMF is precluded from providing financing, unless the country takes steps to restore its debt sustainability, through for example, debt restructuring (IMF 2021a). For countries undergoing debt restructuring, the IMF may support the process by sharing its DSA (with the consent of the debtor authorities) under certain conditions, so that parties can draw on the analysis to calibrate the restructuring (IMF 2023).

For the World Bank, the debt distress ratings in joint IMF-World Bank DSAs for LICs are translated into 'traffic lights', which serve as a guide for grant provisioning within a country's annual International Development Association (IDA) allocation (IMF, 2018). Specifically, countries at high risk or in debt distress (red light) can benefit from 100 per cent IDA grants and medium-risk countries (yellow light) from 50 per cent grants, while low-risk countries (green light) cannot benefit from IDA grants (World Bank 2023).

Given the influence of DSAs on fiscal policymaking and access to external finance, features of the DSA frameworks have been widely reviewed and criticised in terms of: their optimistic macroeconomic projections; their insufficient consideration of human development, climate change risks and investment and sustainable development goals (SDGs); and their underestimation of fiscal multipliers, among other things (see Mustapha et al. 2014; Ho and Mauro 2014; Kraemer and Volz 2022; Pinto 2018; Maldonado and Gallagher 2022; UNESCAP 2023; others in Section 3.1). In addition, the IMF and World Bank also periodically review their own DSA frameworks to assess and enhance their relevance for their surveillance, operations and financing decisions.

This paper aims to contribute to these assessments by investigating the relevance of specific features of IMF/WB DSA frameworks⁴ in the context of large and multiple shocks. It aims to determine to what extent the DSA projections have been useful in the past decade (2011–22, including the recent Covid-19 and Russia-Ukraine war), and offer areas for improvement to enhance DSA frameworks. The paper is structured as follows:

Section 2 begins with a presentation of the concept of public-debt sustainability and key elements of DSAs, before briefly discussing the relevance of DSA frameworks for LICs and MACs. Section 3 assesses the performance of debt and growth forecasts by the IMF and/or in DSAs. Section 4 focuses on key limitations of DSA frameworks in the context of multiple shocks and economic recovery, particularly on three main elements: assumptions regarding fiscal multipliers; relevance of an extreme shock stress test scenario; and use of judgement. Section 5 concludes with suggestions on enhancing some elements of DSA frameworks elements to improve the contribution of DSAs in policymakers' fiscal and debt strategies, as well as early actions by the international financing system to mitigate countries' debt vulnerabilities before they reach a point of debt distress.

2. Public debt sustainability and the relevance of DSA frameworks

2.1 Definition of debt sustainability

The theoretical, empirical and operational underpinnings of debt sustainability are complex. Theoretically, macro-economic identities dictate that a surplus in the balance of payments (BoP) and primary balance is necessary to repay debt, otherwise debt will increase over time (see computations in Mustapha and Prizzon 2015; Debrun et al. 2020). Empirically, however, forecasting primary balance is not straightforward, given the need to take into account forward-looking assumptions regarding economic variables and expectations regarding government strategies to meet its current and future payment obligations (Ams et al. 2020).

The IMF definition of public debt sustainability recognises not only solvency and liquidity factors, but also the political and economic feasibility of policies needed to stabilise the debt-to-GDP ratio and deliver acceptably low rollover risk without restructuring and/or exceptional bilateral support, even in the presence of IMF financing (IMF 2022). Other DSA frameworks such as the one employed by the European Commission (EC) use a debt sustainability definition that is closely related to that of IMF. The EC considers debt to be sustainable 'where fiscal policy can be maintained unchanged over the post-forecast horizon (without changes

in public spending, nor taxation, that would affect the government primary balance), without causing public debt to rise continuously as a share of GDP' (European Commission 2016: 22).

2.2 DSA frameworks for LICs and MACs

The IMF uses two DSA frameworks – one for LICs (LIC DSF) that is jointly conducted with the World Bank, and another for MACs (i.e. the Sovereign Risk and Debt Sustainability Framework for MACs, or SRDSF). The LIC-DSF is being utilised for DSAs of all countries that are eligible for IMF Poverty Reduction and Growth Trust (PRGT) concessional financing and also have access to IDA resources and grants (IMF 2018). A country may graduate from using LIC-DSF to DSF for MACs when 'either its per capita income level exceeds the threshold for a specified period or if they have the capacity to access international markets on a durable and substantial basis' (IMF 2018: 8).

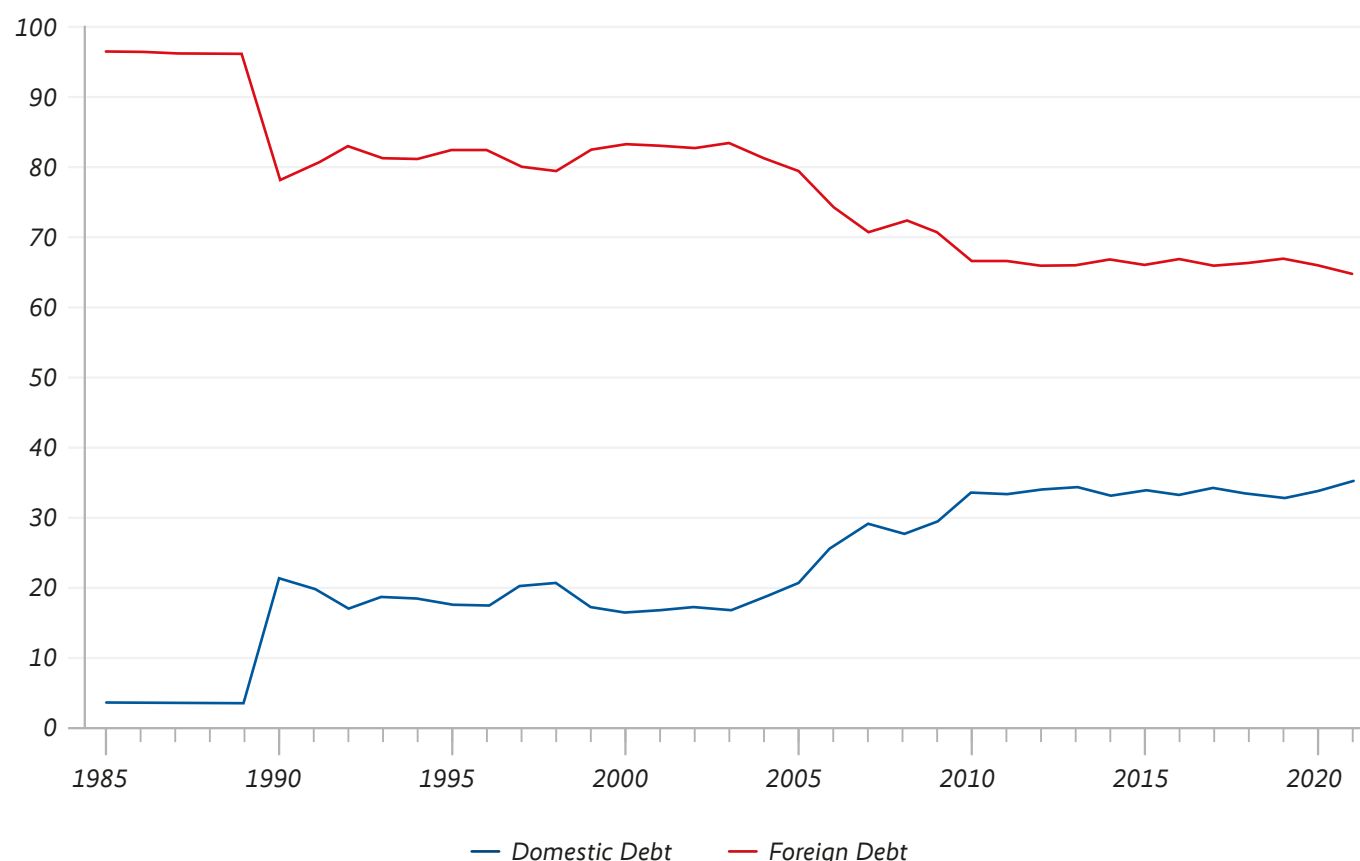
While these two frameworks have common elements, including macroeconomic projections, realism and risk assessment tools and a final DSA output, the LIC DSF and SRDSF have distinct features and assessment tools (see Appendix 1). Historically, the distinction of DSA frameworks between LICs and MACs was based on the assumption that LICs typically have a record of weak policies, plus histories of war and civil strife, and predominantly rely on official financing, compared to advanced and emerging economies that have access to private financing (IMF and IDA 2004). Under the assumption that most LICs' external financing is concessional in terms of interest rate and maturity, the present LIC DSF uses present value (using a discount rate of 5 per cent) of external debt and has a special focus on assessing external debt risks.

However, since the early 2000s, there have been two major trends emerging in the public debt profiles of LICs: a growing share of domestic debt in total indebtedness and increasing commercial sources of external debt.

The share of domestic debt (on a currency basis) to total debt has increased from 19 per cent in the mid-1990s to 35 per cent as of end-2021 (Figure 1, Chuku et al. 2023). Domestic debt typically has higher (non-concessional) interest rates and shorter maturities compared to external debt. In Ghana for example, weighted average interest rates for domestic debt is 13 percentage points more expensive and maturity is shorter by 12 years compared to external debt as of 2021 (MoF Ghana 2021).

Domestic debt has also become more complex as it may be held by non-residents. For example, in Ghana, 16 per cent of domestic debt as of 2021 was owed to foreign in-

⁴ In this chapter, DSA frameworks broadly refer to both the DSA framework applied by the IMF for market access countries, and the DSA framework applied jointly by the IMF and World Bank for low-income countries. When discussions refer distinctly to a specific framework, these are explicitly stated (e.g., LIC-DSF, SRDSF).



Source: Graph lifted from Chuku et al (2021, p.24)

vestors (MoF Ghana 2021); in Nigeria, the share is close to 20 per cent as of 2018 (Hosny 2020). Non-residents' participation in domestic debt markets has advantages, such as a widening of the investor base, but it may also bring increased funding vulnerabilities as the appetite of foreign investors may also be affected by global financial conditions (IMF 2015).

As regards external debt, the external creditor base in LICs has shifted towards more commercial sources of funding. The average annual share of commercial debt to total external debt increased from 22 per cent in 2000-10 to 52 per cent in 2011-21, with a peak of 72 per cent in 2013 (Figure 2). Compared to the fixed and/or concessional terms that govern official debt, some commercial debt is contracted at variable interest rates, which tend to be higher in times of global shocks. In addition, net flows from commercial sources usually decline during heightened global uncertainty, as observed during the onset of the global financial crisis in 2008 and Covid-19 in 2020 (Figure 2).

The trends above raise several implications, particularly for the current LIC DSF, which is heavily focused on external debt. In view of the rising share of domestic debt, total debt to GDP may be a better indicator of solvency

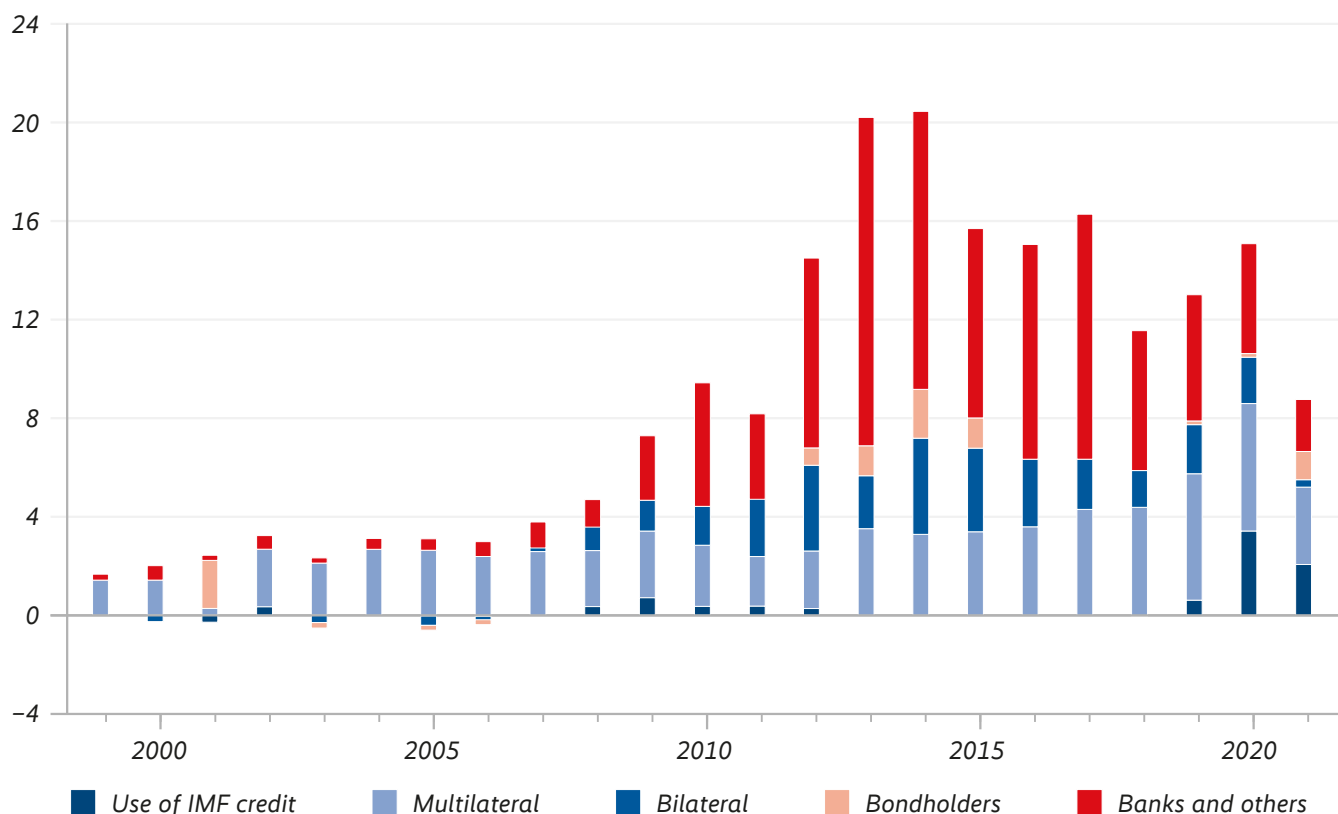
than external debt to GDP, since expensive domestic debt may lead to a higher debt burden even if total public debt is unchanged or declining (Chuku et al. 2021). Near-term liquidity risks also need to be scrutinised for LICs, based on the profile of a widening creditor base – for instance, domestic debt and commercial external debt may employ variable interest rates (or exhibit capital outflows) in times of uncertainty, making rollover risks higher, especially during shock periods. These issues that are related to risks associated with the debt profile are assessed in more depth by the recent enhancements in SRDSF approved in 2021, which require disclosure of the debt holder profile, and incorporate this information over near-, medium- and long-term risk assessments.

An in-depth comparative analysis of the two frameworks is beyond the scope of this paper, but broader risks assessment, calculated according to the evidently changing debt landscape with increasing market access and diversified creditor base in LICs, warrants consideration in the next revision of the LIC-DSF. Based on the common key features of the DSA frameworks (both for LICs and MAC), the next section will focus on their forecasting performance in the context of crisis and non-crisis periods.

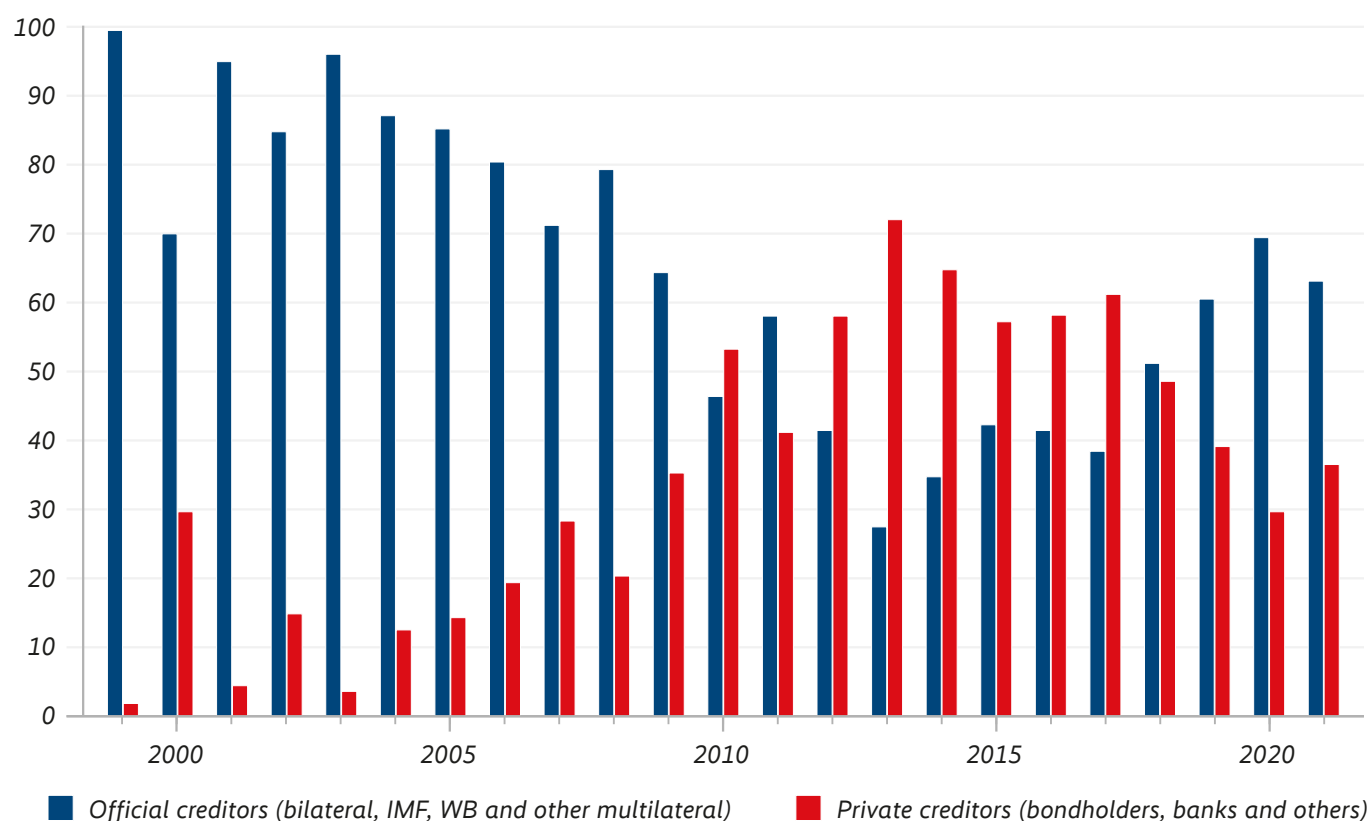
Net financial flows in low-income countries

Figure 2

Billions (\$)



Share (%)



Source: Author's computations based on data from World Bank International Debt Statistics (IDS)

3. Performance of DSA growth and debt forecasts

The macroeconomic projections of indicators affecting the creation or reduction of public debt underpin DSAs. This section begins with a presentation of the key points from recent literature on the issue of optimism bias in the IMF macroeconomic forecasts that are utilised in DSAs. The section will then investigate whether such biases are evident, based on actual and projected growth and debt indicators in the past decade – covering periods of crisis (2020–22, covering Covid-19 and the Russia-Ukraine war) and non-crisis (pre-Covid-19). To understand potential sources of optimism bias, performance of projections of macroeconomic variables driving public debt dynamics will also be investigated, particularly for countries that have been recently in debt distress (i.e. Chad, Ghana, Sri Lanka and Zambia).

3.1 Brief review of the recent literature on performance of IMF growth and debt forecasts

The recent literature⁵ examining the performance of IMF growth and debt forecasts, including both the IMF's own research and wider literature, highlights the presence of optimism bias and its potential drivers.

Focusing on growth performance, the IMF's Independent Evaluation Office (IEO 2014) found that up to three-quarters of 180 countries over the period 1990–2011 show higher predicted medium-term growth rates than actual growth rates. From another lens, within a sample of 194 countries during the period 1990–2019, Hadzi-Vaskov et al. (2021) find that IMF World Economic Outlook (WEO) growth revisions in horizons closer to the current time tend to be larger, more volatile and more negative, implying generally optimistic forecasts in earlier versions of WEO reports.

Meanwhile, covering debt projections, Flores et al. (2022) found that debt-to-GDP ratios tend to be optimistic, wherein realised debt on average was about 10 per cent of GDP higher than forecast. Mooney and de Soyres (2017) also found optimism bias for IMF public and external debt projections, driven by overly ambitious fiscal and growth forecasts, in a smaller sample of LICs. They found that these biases remain even after controlling for unanticipated shocks.

Several studies highlight factors that drive and/or exacerbate the growth optimism bias, including:

- underestimation of (negative) fiscal multipliers resulting from higher fiscal adjustment (Blanchard and Leigh 2013 and 2014; IMF 2019; Ismail et al. 2020)

- challenges on assessing global recessions/external shocks (An, Jalles, and Loungani 2018; Celasun et al. 2021; IMF 2019; IEO 2014);
- overestimation of the quality and pace of fiscal adjustments (IMF 2019; Mooney and de Soyres 2017), especially in contexts undergoing political transitions (Rehbein 2022);
- overestimation of repayment capacities of countries in distress (Guzman and Heymann 2015);
- expansion of credit-to-GDP and high degree of dollarisation (Carrière-Swallow and Mazluf 2021);
- being in (or having a history) of being in IMF programmes (IEO 2014; IMF, 2019; Mooney and de Soyres 2017);
- longer forecast horizons (Celasun et al. 2021; Ismail et al. 2020; Mooney and de Soyres 2017; Frankel 2011); and
- political economy motivations (Bird 2005).

Consequences of optimistic macroeconomic projections are highlighted by a number of studies, including excessive deficits that discourage precautionary fiscal policies (Frankel 2011); an increase in the likelihood of future recessions and fiscal crises (Beaudry and Willems 2018); unanticipated debt crises and growth slowdowns (Easterly 2013).

In the context of DSAs, the IMF's review acknowledges that 'erroneous forecasts may produce a distorted view of the future debt level and lead to misguided policy advice' (IEO 2014). In countries already in distress, optimistic growth and debt forecasts underestimate the need for debt restructuring (Guzman and Heymann 2015). Given that past studies mostly covered data prior to Covid-19 in 2020, the next sub-section will present a descriptive analysis of the performance of IMF forecasts in the last decade (2011–22) covering periods pre- and post-Covid crisis.

3.2 Performance of IMF growth and debt forecasts

The performance of IMF forecasts is examined by utilising descriptive statistics of the forecast errors, computed by subtracting projections (conducted four years earlier) from actual data of growth and debt indicators.⁶ The choice of a four-year horizon enables the grouping of data into periods without global crisis (i.e. after the global financial crisis in 2011–2014 and 2015–2018) up to the years (2019–2022) which cover recent global shocks of Covid-19 and the Russia-Ukraine war.

Forecast and actual data are based on IMF WEO reports and country groupings by income level are based

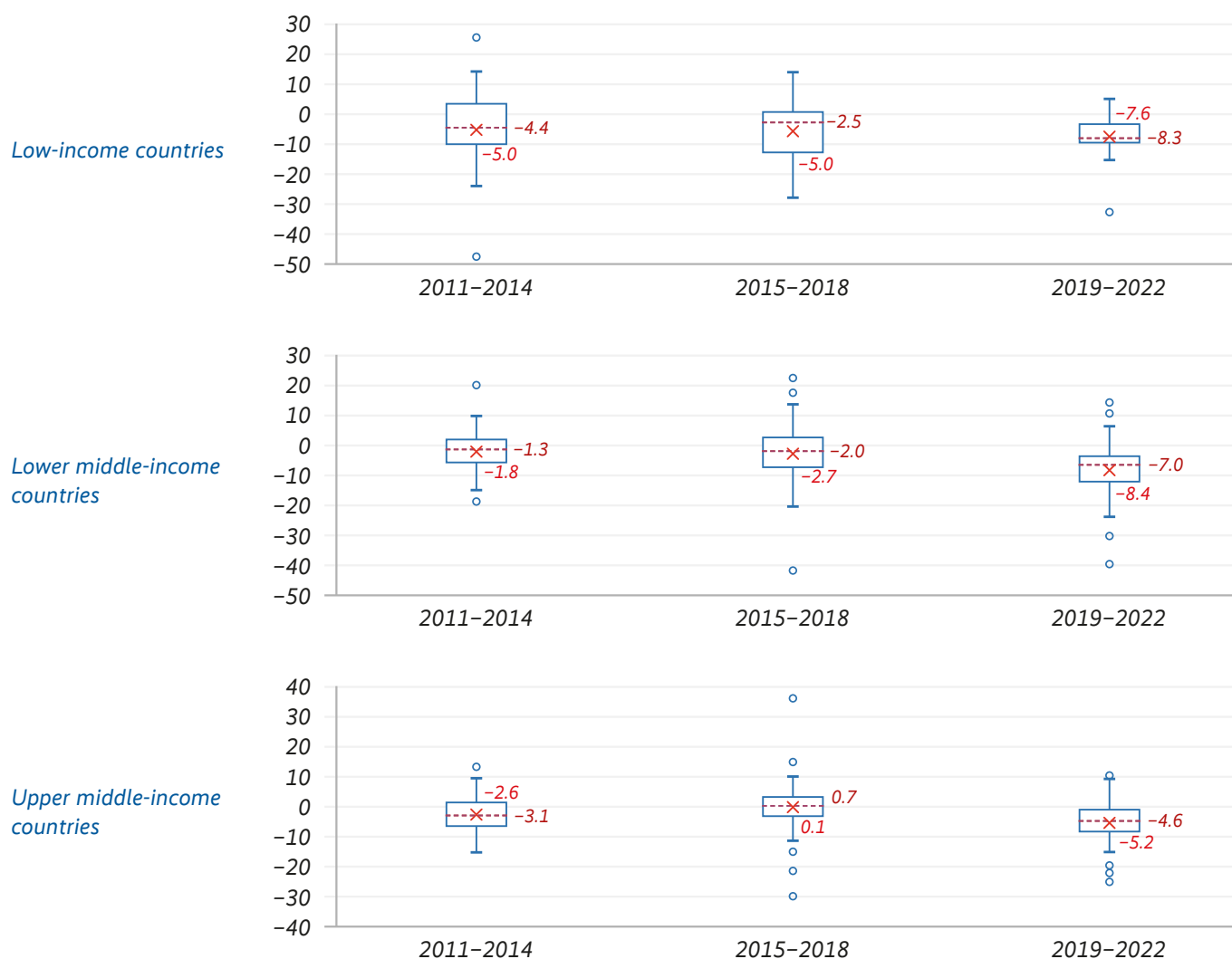
⁵ The review focuses on studies since 2000s with cross-country sample.

⁶ For example, forecasts between 2011–2014 are based on 2011 IMF WEO report; forecasts between 2015–2018 are based on the 2015 IMF WEO report, and so on.

Forecast error in cumulative 4-year GDP growth

Figure 3

(actual less projections, percentage points, negative = optimism)



Note: Forecast error is based on actual less forecast cumulative growth rate over a 4-year period. Forecasts are based on the IMF WEO report during first year of the 4 year period (2011-2014 forecasts are based on IMF WEO as of September 2011) and actual/estimated data are based on IMF WEO as of April 2023. X is the average difference between 2022 actual and forecast, the horizontal line is the median difference, the box shows the interquartile range, and the whiskers are upper and lower limits within 1.5 times the 1st and 3rd quartile levels; dots outside the whiskers are outliers exceeding limits (in whiskers).

Source: Authors computations based on IMF WEO database.

on the World Bank classification⁷. The choice of data sources allows time-efficient and consistent cross-country data collection (instead of data gathering from annual individual DSA reports which may not be available for similar periods/years in all countries) over time, and under the assumption that IMF WEO medium-term forecasts largely inform the DSA macroeconomic projections.⁸

Data analysis shows optimism regarding cumulative growth forecasts especially for LICs, with wider errors during large shocks (Figure 3). Optimistic forecasts mean that growth outcomes turned out worse than originally anticipated. Figure 3 suggests optimistic growth forecasts in the last decade, with higher forecast errors for LICs than MICs. Forecast median four-year cumulative GDP growth for LICs is 4.4 percentage points higher than realised growth during

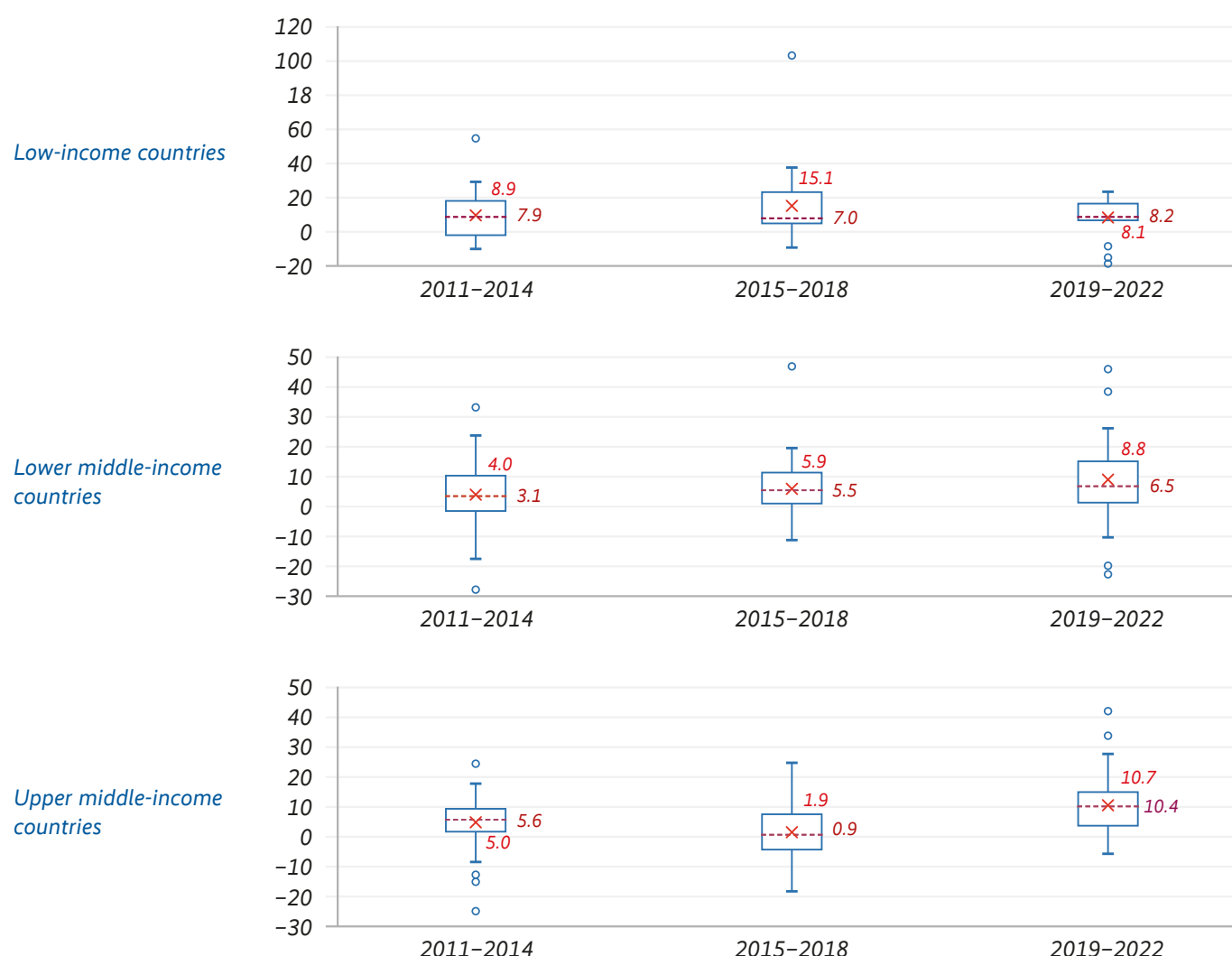
⁷ It may be noted that the LIC coverage under the World Bank classification and the IMF-World Bank LIC DSF are different. The World Bank LIC classification is based on gross income per capita, while the countries using the LIC-DSF are those that are both eligible for IDA and PRGT resources (i.e. PRGT eligibility is based on income per capita, market access and short-term vulnerabilities), most of which are within the LIC and LMIC groups based on World Bank classification. For instance, as of 2019 there are 70 PRGT-eligible countries that are also eligible (out of 77 countries) to IDA resources (IMF 2020). Of the 70 PRGT and IDA eligible countries, 26 are LICs, 34 are LMICs, 9 are UMICs and one is a high-income country based on World Bank classification as of 2019.

⁸ Data requirements for macroeconomic projections in DSAs are informed by the IMF country teams and WEO forecasts (see IMF 2021b: 62; and IMF 2017: 42). Consultation of the author with an IMF official confirmed the use of IMF WEO forecasts in DSAs especially at and around the time when the WEO report is finalised but may also differ as country teams update their forecasts at the time of debt sustainability assessment (which may be outside the WEO publication period).

Forecast error in changes in debt-to-GDP ratio over 4-year horizon

Figure 4

(actual less projections, in percentage of GDP, positive = optimism)



Note: Forecast error is based on actual less forecast changes in debt-GDP ratios between a 4 year period (e.g., change in debt-to-GDP ratio between 2014 and 2011). Forecasts are based on the IMF WEO report during first year of the 4 year period (e.g., 2011-2014 forecasts are based on IMF WEO as of September 2011) and actual/estimated data are based on IMF WEO as of April 2023.. X is the average difference between 2022 actual and forecast, the horizontal line is the median difference, the box shows the interquartile range, and the whiskers are upper and lower limits within 1.5 times the 1st and 3rd quartile levels; dots outside the whiskers are outliers exceeding limits (in whiskers).

Source: Authors computations based on IMF WEO database.

non-crisis periods (2011–2014), compared to 1.3 percentage points and 3.1 percentage points difference in lower middle-income countries (LMICs) and upper middle-income countries (UMICs), respectively. In 2015–2018, optimistic median forecast errors narrowed, aligned with the inter-quartile range of forecast error (+0.4 to –2.7 percentage points) in the IMF review in 2019. Amid the Covid-19 and Russia-Ukraine war shocks, forecast errors widened across countries, with actual GDP growth rate performance being lower by 5–8 percentage points than in earlier forecasts.

Similar to growth forecasts, debt projections also exhibit optimism bias across the years, especially for LICs, and with larger errors during recessions (Figure 4). Forecast errors are measured by the difference between forecast and actual

changes of debt-to-GDP ratios over a four-year period. Larger errors mean that public debt turned out to be higher than expected. Across all countries, median forecast errors during non-crises periods are lower (5.2 per cent of GDP in 2011–2014, 4.2 per cent in 2015–2018) compared to the larger errors (median of 9 per cent of GDP in 2019–2022) during the recent crises. This is aligned with the findings of Flores et al (2022), who found a 4.5 per cent of GDP forecast error in debt during non-recession periods, and up to 15 per cent of GDP during recessions.

There are several factors that drive optimistic forecasts, as discussed in section 3.1. The next sub-section aims to understand potential drivers of these optimistic projections in recent periods by looking at selected country case studies.

3.3 Performance of DSA forecasts of debt drivers: Chad, Ethiopia, Ghana, Sri Lanka and Zambia

The DSA reports provide forecast and actual data of drivers of debt dynamics. Based on the standard debt dynamic equation, public debt increases with primary deficit, interest rate growth differential, exchange rates, other debt creating flows, and residuals (see debt dynamic derivations in IMF 2022).

This subsection examines the forecast errors of these debt dynamic indicators in DSAs for Chad, Ethiopia, Ghana and Zambia – countries which applied for help to the G20 Common Framework for Debt Treatment, and Sri Lanka, which recently convened a creditor committee for the country's debt restructuring. Data coverage is for the period 2011–2022, to investigate the relative significance

of each debt dynamic driver in the year before each country applied for debt treatment. Forecast errors are computed by subtracting actual data from projections of the DSAs done in the beginning of a four-year period.⁹

Across five cases and time periods, there have been consistently optimistic expectations for the primary deficit. This is mostly driven by lower-than-expected revenues and grants, since some countries (Chad, Ghana and Sri Lanka) were able to reduce their expenditures for some years, at least before the pandemic started in 2020. Most countries also exhibited higher expectations from the debt-reducing effects of output growth in most years. These trends potentially reflect the underestimated negative fiscal multiplier from fiscal consolidation cited in the literature, with potential adverse effects on revenue-generating activities, and hence on growth.

⁹ For example, forecast of debt drivers between 2011–2014 is based on DSA as of 2011 or DSA in closest earlier year; 2015–2018 forecasts are based on DSA as of 2015, and so on.

Forecast errors in drivers public debt dynamics

Table 1

(actual less forecast, % of GDP)

● optimistic forecast = worse-than-expected outcome ● pessimistic forecast = better-than-expected outcome

CHAD	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Change in public debt	9.1 ●	-1.7 ●	3.4 ●	10.9 ●	-0.2 ●	10.5 ●	4.9 ●	3.9 ●	8.4 ●	6.5 ●	6 ●
Contribution to changes in public debt											
Primary deficit	0.6 ●	3.5 ●	3.5 ●	6.1 ●	1.3 ●	0.1 ●	0.8 ●	-0.2 ●	1.1 ●	0.6 ●	3.9 ●
o/w from revenue and grants	-5.5 ●	-4.2 ●	-6.2 ●	-9.2 ●	-0.5 ●	-4.2 ●	-2.8 ●	-3.7 ●	-2 ●	3.9 ●	-0.6 ●
o/w from primary expenditure	-4.9 ●	-0.8 ●	-2.6 ●	-3.1 ●	0.9 ●	-4 ●	-2 ●	-3.9 ●	-0.8 ●	4.5 ●	3.3 ●
Real interest rate	-1.8 ●	-2.1 ●	0.4 ●	0.3 ●	5 ●	1.2 ●	1.3 ●	-0.3 ●	0 ○	0.9 ●	-1.9 ●
Real GDP	1.2 ●	-0.6 ●	-0.7 ●	-1.1 ●	1.3 ●	4 ●	4.1 ●	1.7 ●	-0.5 ●	3.4 ●	2.4 ●
Exchange rate	2.3 ●	0 ○	-0.1 ●	2.1 ●	-0.8 ●	1.9 ●	-2.3 ●	1.1 ●	○	○	○
Other debt creating flows	0 ○	-0.1 ●	-0.5 ●	-4.4 ●	-0.4 ●	4.2 ●	-1.4 ●	-0.3 ●	-1.7 ●	0.5 ●	1.9 ●
Residuals	6.8 ●	-2.5 ●	0.7 ●	7.9 ●	-6.6 ●	-1.1 ●	2.5 ●	2.0 ●	8.6 ●	2.6 ●	-1.6 ●
Debt sustainability assessment (actual years)											
Risk of public debt distress		H		H					H	H	DD
Risk of external debt distress	M	H		H	H	H	DD	DD	H	H	DD
Public debt sustainability	S	NS			S		NS		S	S	NS

ETHIOPIA	2011	2012	2013	2014	2015	2016	2017	2018	2019
Change in public debt	-3.9 ●	-5.4 ●	5.4 ●	5.7 ●	0.9 ●	-8.3 ●	-2.1 ●	2 ●	0.7 ●
Contribution to changes in public debt									
Primary deficit	0.4 ●	2.5 ●	5.3 ●	6.8 ●	1.4 ●	2.6 ●	2.3 ●	1.8 ●	0.8 ●
<i>o/w from revenue and grants</i>	0.2 ●	-2.3 ●	-2.2 ●	-3.1 ●	2.8 ●	3.4 ●	-3.6 ●	-5.3 ●	-1.6 ●
<i>o/w from primary expenditure</i>	0.4 ●	0.2 ●	3.1 ●	3.7 ●	4.3 ●	5.9 ●	-1.3 ●	-3.6 ●	-0.9 ●
Real interest rate	-2.5 ●	-3 ●	0 ○	-0.7 ●	-0.9 ●	-0.6 ●	-10.7 ●	-5.6 ●	11.7 ●
Real GDP	0 ○	-0.3 ●	-0.1 ●	-0.7 ●	-1.5 ●	-2 ●	-1 ●	0.3 ●	-0.4 ●
Exchange rate	0.5 ●	-4.5 ●	0.1 ●	-0.7 ●	-0.3 ●	-1 ●	11.5 ●	7.5 ●	-12 ●
Other debt creating flows	-0.2 ●	-0.4 ●	-0.1 ●	0 ○	0 ○	0 ○	-0.6 ●	-0.4 ●	0 ○
Residuals	-2.1 ●	0.2 ●	0.1 ●	1.0 ●	2.2 ●	-7.3 ●	-3.4 ●	-1.4 ●	0.5 ●
Debt sustainability assessment (actual years)									
Risk of public debt distress								H	H
Risk of external debt distress		L	L	L	M	M	H	H	H
Public debt sustainability		S	S	S	S			S	S

GHANA	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2022
Change in public debt	-3.8 ●	7.5 ●	6.1 ●	18.6 ●	1.9 ●	3.3 ●	4.9 ●	6.2 ●	1.1 ●	14.5 ●	1.3 ●
Contribution to changes in public debt											
Primary deficit	0 ○	9.3 ●	7 ●	4.6 ●	0.2 ●	2.2 ●	1.3 ●	4.6 ●	0.4 ●	8.5 ●	1.8 ●
<i>o/w from revenue and grants</i>	0 ○	-1.2 ●	-3.8 ●	-2.5 ●	-4.8 ●	-7.1 ●	-6.7 ●	-7.2 ●	-0.8 ●	-2.6 ●	0.2 ●
<i>o/w from primary expenditure</i>	0 ○	8.1 ●	3.2 ●	2.1 ●	-4.6 ●	-4.9 ●	-5.3 ●	-2.5 ●	-0.4 ●	6.1 ●	2 ●
Real interest rate	-1.3 ●	-0.8 ●	0.9 ●	1.7 ●	-0.5 ●	-0.3 ●	1 ●	0.5 ●	0.5 ●	1.4 ●	-9.8 ●
Real GDP	-1.3 ●	-0.4 ●	-1.1 ●	0.2 ●	1.4 ●	2.2 ●	2.1 ●	1.4 ●	0.6 ●	3.3 ●	-0.3 ●
Exchange rate	1.4 ●	2.7 ●	0.9 ●	8.5 ●	2.7 ●	-1 ●	-0.9 ●	0.3 ●	○	○	○
Other debt creating flows	0 ○	0.2 ●	0.2 ●	0.1 ●	0 ○	0 ○	0 ○	0.5 ●	0 ○	0 ○	0 ○
Residuals	-2.6 ●	-3.3 ●	-1.7 ●	3.5 ●	-1.9 ●	0.3 ●	1.5 ●	-0.1 ●	-2.4 ●	1.7 ●	3.0 ●
Debt sustainability assessment (actual years)											
Risk of public debt distress									H	H	
Risk of external debt distress	M	M	M	M	H	H	H	H	H	H	
Public debt sustainability					S	S	S		S	S	

SRI LANKA	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2022
Change in public debt	1.4 ●	-1.7 ●	0.6 ●	3.1 ●	7.1 ●	4.3 ●	1.2 ●	9.9 ●	3.7 ●	18.6 ●	16.6 ●
Contribution to changes in public debt											
Primary deficit	2.6 ●	0 ○	-0.1 ●	1.5 ●	2 ●	0.1 ●	0 ○	-0.5 ●	3.5 ●	8.6 ●	6 ●
<i>o/w from revenue and grants</i>	-1.9 ●	-1 ●	-2.2 ●	-3.3 ●	-0.6 ●	0.3 ●	-0.4 ●	-0.9 ●	-2.5 ●	-6.8 ●	-7.8 ●
<i>o/w from primary expenditure</i>	0.6 ●	-1 ●	-2.4 ●	-1.8 ●	1.3 ●	0.5 ●	-0.4 ●	-1.5 ●	1 ●	1.8 ●	-1.7 ●
Real interest rate	-3.1 ●	-0.7 ●	1 ●	1.8 ●	2.7 ●	1.7 ●	-1.1 ●	2.1 ●	1.5 ●	1.4 ●	-17.2 ●
Real GDP	-0.1 ●	0.3 ●	-0.3 ●	1.2 ●	1 ●	0.9 ●	1.5 ●	1.5 ●	1 ●	6.6 ●	14.2 ●
Exchange rate	1.2 ●	-1 ●	-0.8 ●	-1.5 ●	○	○	○	○	○	○	○
Other debt creating flows	0 ○	0.3 ●	-0.1 ●	0 ○	0 ○	0 ○	-0.3 ●	-1.4 ●	0 ○	0 ○	0 ○
Residuals	0.8 ●	-5.2 ●	-1.2 ●	-1.7 ●	-1.7 ●	0 ○	0.3 ●	0.8 ●	-1.9 ●	0.7 ●	5.3 ●
Debt sustainability assessment (actual years)											
Risk to public debt sustainability						H	H	H	H		
Public debt sustainability		S	S	S							NS

ZAMBIA	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2022
Change in public debt	3.1 ●	2.8 ●	9.6 ●	20.3 ●	0.2 ●	5 ●	15.7 ●	38.2 ●	84.2 ●	-32 ●	-9.1 ●
Contribution to changes in public debt											
Primary deficit	-0.7 ●	4.4 ●	2.7 ●	1.2 ●	-0.7 ●	1.6 ●	1.8 ●	4.7 ●	4.6 ●	4.8 ●	4.9 ●
<i>o/w from revenue and grants</i>	-1.9 ●	-5.1 ●	-4.6 ●	0.8 ●	0.8 ●	-0.7 ●	1.2 ●	0.1 ●	-0.3 ●	1.6 ●	-0.7 ●
<i>o/w from primary expenditure</i>	-2.6 ●	-0.6 ●	-1.9 ●	2 ●	0.2 ●	0.9 ●	3 ●	3.7 ●	8.5 ●	6.5 ●	4.1 ●
Real interest rate	0.1 ●	-1 ●	0.1 ●	-0.3 ●	0 ○	-0.9 ●	-0.2 ●	2.8 ●	1.1 ●	-8.2 ●	-2.4 ●
Real GDP	0.7 ●	1 ●	0.9 ●	0.9 ●	0.3 ●	0.7 ●	0.5 ●	0.7 ●	3.6 ●	-5.2 ●	-4.2 ●
Exchange rate	○	○	○	○	○	○	○	○	○	○	○
Other debt creating flows	-0.4 ●	-0.2 ●	3.7 ●	2.6 ●	0 ○	0 ○	0 ○	0 ○	0 ○	0 ○	0 ○
Residuals	3.1 ●	-1.9 ●	0.3 ●	5.2 ●	9.1 ●	5.3 ●	8.4 ●	25.2 ●	55.9 ●	12.1 ●	-7.5 ●
Debt sustainability assessment (actual years)											
Risk of public debt distress								H			DD
Risk of external debt distress	L	L		M		H		H			DD
Public debt sustainability	S	S		S				NS			NS

Source: Author's compilation/computations based on IMF DSA country reports.

In contrast with the other sample countries, Ethiopia's case presents consistent underestimation of the debt-reducing effects of growth (2011–2019, except 2018), despite a higher-than-expected primary deficit. This trend may resonate with the other side of fiscal multiplier literature – potentially underestimating the (positive) growth impact from certain types of public spending. Ample literature suggests the more important role of public investment compared to public consumption in stimulating short- and long-run growth in developing countries (see literature review by Raga, 2021). During the period 2011–2019, average public investment in Ethiopia was at 9.2 per cent of GDP, compared to the 1.8–4.5 per cent of GDP range in the other four case studies.¹⁰ The role of fiscal multipliers on DSA frameworks will be further discussed in section 4.

In the context of multiple shocks, the latest DSAs in four out of the five countries above indicate unsustainable debt (Chad, Sri Lanka and Zambia by 2022; Ghana by 2023). Ethiopia's most recent DSA, published in 2019, indicated a high risk of debt distress, but its application to the Common Framework in February 2021 signals the government's recognition of the need to address increasing risks to its debt sustainability (see MoF Ethiopia, 2022). During the shock period (2020–2022), forecast errors on the debt-increasing contribution of primary deficit widened to 2.3–5.7 per cent of GDP in 2020–2022, compared to a range of 1.0–3.3 per cent of GDP forecast errors in 2011–2019. The wider forecast errors indicate the difficulties faced by DSA analysts in anticipating the magnitude of impact of shocks on debt dynamics. However, stress-testing exercises in DSAs may provide a picture of debt implications in the event that extreme shocks materialise. Whether such shocks are considered in the DSA stress-testing tools will be assessed in the next section.

4. Limitations of DSA frameworks in the context of multiple crises

IMF growth and debt forecasts have been largely optimistic in the last decade, but recent unprecedented global shocks have made these forecast errors wider than before, especially in countries at high risk of, or actually in, debt distress, as shown in Section 3. As global shocks seem to be more frequent, overlapping, and with significant adverse impacts, these shocks will affect the debt-carrying capacities of countries, and ultimately how debt sustainability is assessed and managed. Leveraging existing evidence from the literature, this section aims to provide some key features of recent crises, and suggests that these features be reflected in the DSA frameworks.

4.1 Fiscal multipliers during economic downturns and recovery.

Underestimation of the (negative) fiscal multipliers of fiscal consolidation has been one of the cited drivers of the IMF's optimistic forecasts, as discussed in Section 3.1. In times of recessions, underestimations may be larger, as several studies have highlighted higher contractionary growth effects of fiscal adjustment during economic downturns (Attinasi and Klemm 2014; Blanchard and Leigh 2013; Botev and Mourougane 2017; Cugnasca and Rother 2015; IMF 2019; Kataryniuk and Valles 2015).

Meanwhile, the recent Covid-19 pandemic highlighted the role of expansionary fiscal stimulus in mitigating the health and economic impacts of the crisis. Kinda et al. (2022) highlight that in the context of pandemics (including 2020 data during Covid-19), fiscal multipliers from public spending can be twice as large as those that occur during normal times. Earlier cross-country evidence on higher fiscal multipliers from expansionary policies during significant crises are also well documented in the literature (Alichi et al. 2019; Auerbach and Gorodnichenko 2013; Baum et al. 2012; Gechert and Rannenberg 2018; Koh, 2017; Mineshima et al. 2014; Sheremirov and Spirovska 2019).

In addition, studies also highlight the role of specific fiscal policy instruments in making an impact on growth. For fiscal consolidations, expenditure-based adjustment (e.g. spending cuts) tend to lead to smaller growth output losses than revenue-based adjustments (e.g. tax increases) (Alesina et al. 2015; Attinasi and Klemm 2014; Yang et al. 2013). Notably, countries that undertake fiscal consolidations but protect public investment vis-à-vis public consumption witnessed not only attenuated recessionary effects of austerity in the short-run, but also expansionary effects over the medium term (Ardanaz et al. 2021; Larch et al. 2022).

For fiscal expansions, the multiplier effects of public spending may be twice as high as those resulting from tax reductions and transfers (Gechert 2015). Within public spending, investment has higher growth effects than consumption (Alichi et al. 2019; Bose 2007; Furceri and Li 2017; Ilzetski et al. 2013; World Bank 2018).

Multiplier effects also vary depending on the sectoral recipient of public spending – typically exhibiting the high short-term growth impact of spending on education and social protection (Asea 2016; Bose et al. 2007; Bracco et al. 2021) and the long-term growth benefits of public investment in infrastructure and renewable energy (Batini et al. 2021; IMF 2020). This is worth highlighting in cases where public debt is driven by spending on productive public investment, which in turn can generate revenues and econo-

¹⁰ Author's computations based on general government investment data generated from IMF Investment and Capital Stock Dataset.

my-wide productivity effects that can help in long-term public debt sustainability. For instance, an augmented DSA approach by UNESCAP (2023) suggests that public debt is found to decline over the long term when the socio-economic benefits of public investment are incorporated into the analysis.

Other factors affecting the size of multiplier effects are the country's income level, the sources of funding for fiscal policy, the level of public debt, the exchange rate regime, trade openness, institutional efficiency, and the degree of monetary policy accommodation (see Raga, 2021).

Despite the ample economic literature presenting evidence on the varying magnitudes of fiscal multiplier effects in specific contexts, the current IMF SRDSF and IMF-WB LIC-DSF do not provide enough information on the relevant fiscal multiplier to be effective. Current DSA frameworks only consider fiscal multipliers as part of their realism tools, which check whether baseline projections of fiscal adjustment are aligned with possible growth paths based on a pre-determined range of size and persistence of fiscal multipliers (Table 2). However, in reality, there are feedback effects from fiscal policy that need to be considered in the baseline projections.

Fiscal multiplier assumptions in IMF DSA frameworks

Table 2

	LIC-DSA	MAC-DSF	MAC-SRDSF (from 2022)
Fiscal multipliers (FM)			
Size of FM from fiscal consolidation (negative growth impact)	Considered in realism check of baseline growth path. Assumed plausible FM size range: 0.2–0.8	Contractionary impact of fiscal adjustment expected to be factored in the construction of baseline growth path.	Considered in realism check of baseline growth path. Considered plausible FM size range: 0.5, 1.0, 1.5
Persistence of FM	0.6	Not specified	0.6
Realism flag	Baseline growth path deviation from path based on 0.4 FM	Buoyant growth projections alongside sizeable fiscal adjustment requires strong justification.	Large discrepancies between the baseline and growth implied by fiscal adjustment paths.
Public investment-growth assumptions			
Factors considered in country DSA	Country team assessment on decomposition of contributions to growth from: (i) increase in the government capital stock due to public investment (based on cross-country evidence), and (ii) other sources. Above decomposition does not consider possible endogenous responses of productivity or private factors of production to increases in government capital.	None	Public investment considered in long-term assessment and focuses on debt implications of investment needs for climate change adaptation and mitigation.
Realism flag	Deviation from historical country data		N/A. Risk assessments are judgment-based.

Sources: Author's compilation/analysis of IMF (2017, 2018) for LICs; IMF (2013) for MAC-DSF; IMF (2022) for MAC-SRDSF.

	Prior Covid19	Covid19/Russia-Ukraine war context			
	2018/2019	2020	2021	2022	2023
Chad	√ ²	√ ²	√ ⁴		√ ²
Egypt	X	X	X	X	√ ¹
El Salvador	√ ²	√ ³		√ ³	
Ethiopia	√ ⁴	√ ¹			
Ghana	√ ¹	X	√ ⁴		√ ⁴
Malawi	√ ¹	√ ⁴	√ ³	√ ²	√ ¹
Sri Lanka	X			X	√ ⁴
Tunisia	X	X	X		
Zambia	√ ²			√ ¹	√ ¹

Notes: 1/ Examined as part of realism tool; 2/ With brief discussion on implication of determinants of fiscal multipliers (e.g., expansion, shocks, reforms, instruments) on baseline growth assumptions; 3/ Incorporated in baseline assumption, with reported size of fiscal multiplier; 4/No discussion on fiscal multipliers despite deviation from growth paths based on assumed fiscal multiplier range.

Sources: Author's compilation/analysis of IMF (2017, 2018) for LICs; IMF (2013) for MAC-DSF; IMF (2022) for MAC-SRDSF.

It might be argued that the DSA frameworks leave room for DSA user judgment to reflect a more appropriate fiscal multiplier based on country-specific factors or significant economic developments. However, this general guideline seems to not encourage deeper discussions of fiscal multipliers. For instance, the IMF's independent review found that fiscal multipliers are rarely reported or discussed in IMF programme documents, with fiscal multipliers explicitly mentioned in only 15 per cent of these documents (Gupta 2021).

The above limitation is confirmed by an examination of nine case studies presented in Table 3. Out of 32 DSAs between 2018/19 and 2023, only 6 (18.7 per cent of the total) included brief discussions of factors considered in determining the size of the fiscal multipliers and reflected them

in baseline projections. Explicit reporting of the size of fiscal multipliers utilised in baseline projections were only present in three cases (9.4 per cent of the total).

In addition to the lack of attention given to fiscal multipliers in baseline projections, the DSAs also fail to consider the differential growth effects of fiscal policies resulting from: the instrument used, the current stage in the business cycle, or the country context – key factors that are highly relevant in the context of multiple crises. In particular:

→ The IMF DSA frameworks only consider fiscal multipliers in terms of fiscal adjustment, a procedure which assumes that fiscal multipliers used for this purpose have a contractionary effect on growth. Analysis of fiscal

multipliers for expansionary policies and by policy instrument is absent.

- The fiscal multiplier assumptions are based on cross-country estimates, which may be less relevant when fiscal multiplier effects deviate significantly from historical averages during shock periods. The literature provides evidence that the contractionary effects of fiscal consolidation and the expansionary effects of fiscal spending are both higher during recessions.
- The impact of public investment on growth is only explicitly considered in LIC-DSA and to a limited extent (i.e. in terms of climate-related investment) in SRDSF. In addition, in the LIC-DSA, only the growth contribution of public investment to capital stock is considered, not other possible endogenous responses of productivity or private factors of production (multiplier effects on the wider economy).

4.2 Extreme shocks and scarring effects

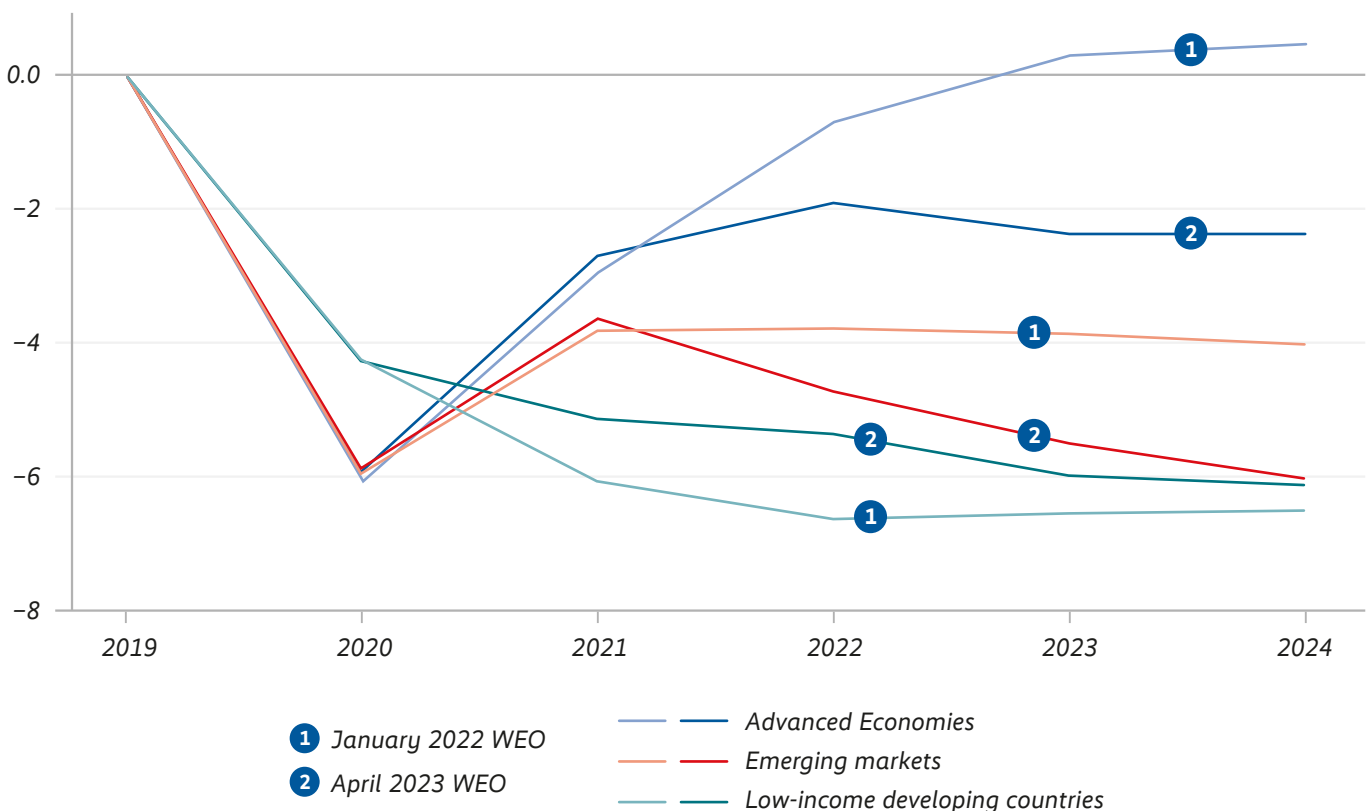
Significant global shocks may result in scarring, which means persistent output losses after the shocks, as seen during the global financial crisis and the Covid-19 pan-

dem. For instance, IMF (2018) shows that 60 per cent and 85 per cent of countries that, respectively, did not and did experience a banking crisis in 2007-08, performed below pre-2009 trends as of 2017. For Covid-19, emerging and low-income economies with limited remote-work adaptability, limited policy support and slower vaccination during the pandemic are estimated to have larger and more lasting damage than higher-income countries (IMF 2022).

Prolonged periods of depressed output growth can affect debt sustainability through various channels. Scarring effects may lower the tax base, weakening capacity to repay debt and exacerbating indebtedness (Lian et al. 2022). Persistent upward pressure on the budget deficit due to continued expenditures to address the impact of protracted shocks may lead to rising debt levels and debt vulnerabilities, limiting fiscal space in the event of new recessions and adversely affecting future economic activities and risks (Larch et al. 2022; Jackson and Lu 2023). In the context of the Covid-19 and Russia-Ukraine war shocks, IMF (2022) projects that medium-term output of low- and middle-income countries will likely remain 6 per cent below pre-Covid-19 levels, with the medium-term primary deficit also remaining wider than in the pre-pandemic period (Figures 5, 6).

Deviation in GDP from pre-pandemic forecast (%)

Figure 5

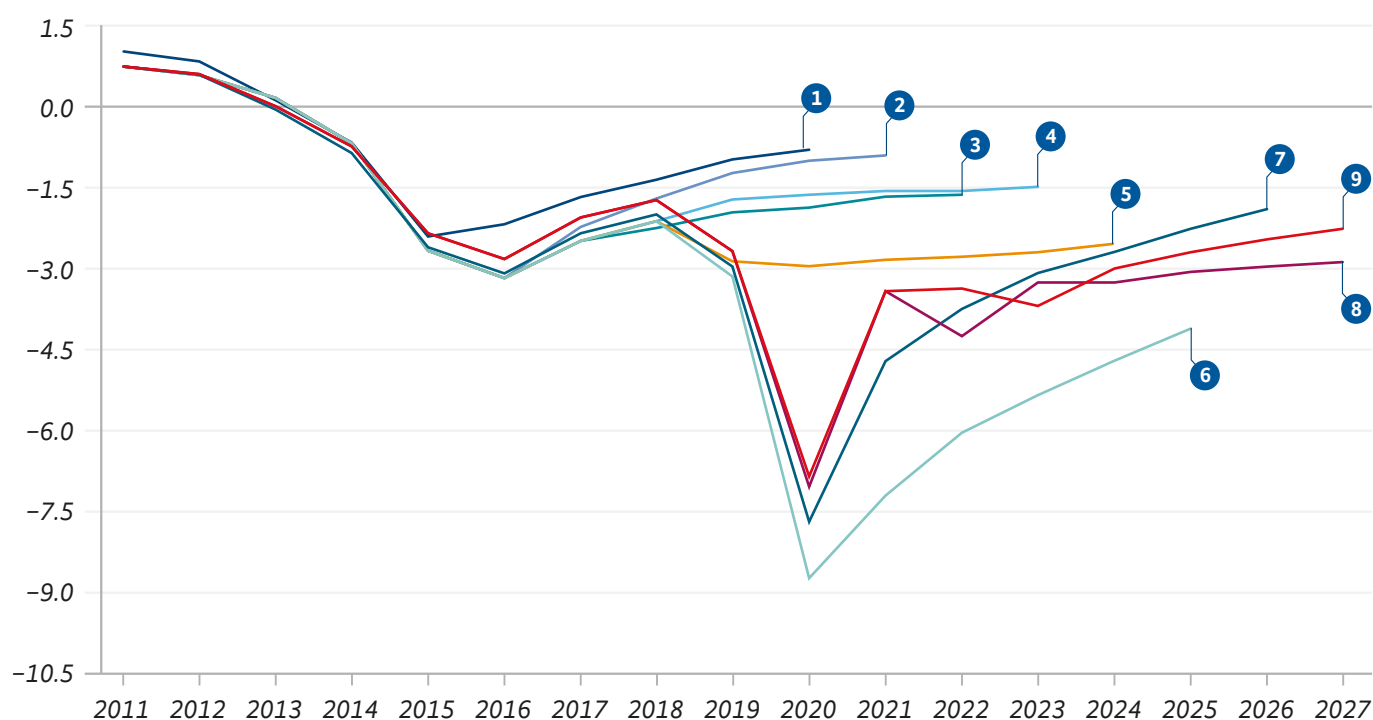


Source: Graph lifted from Jackson and Lu, 2023

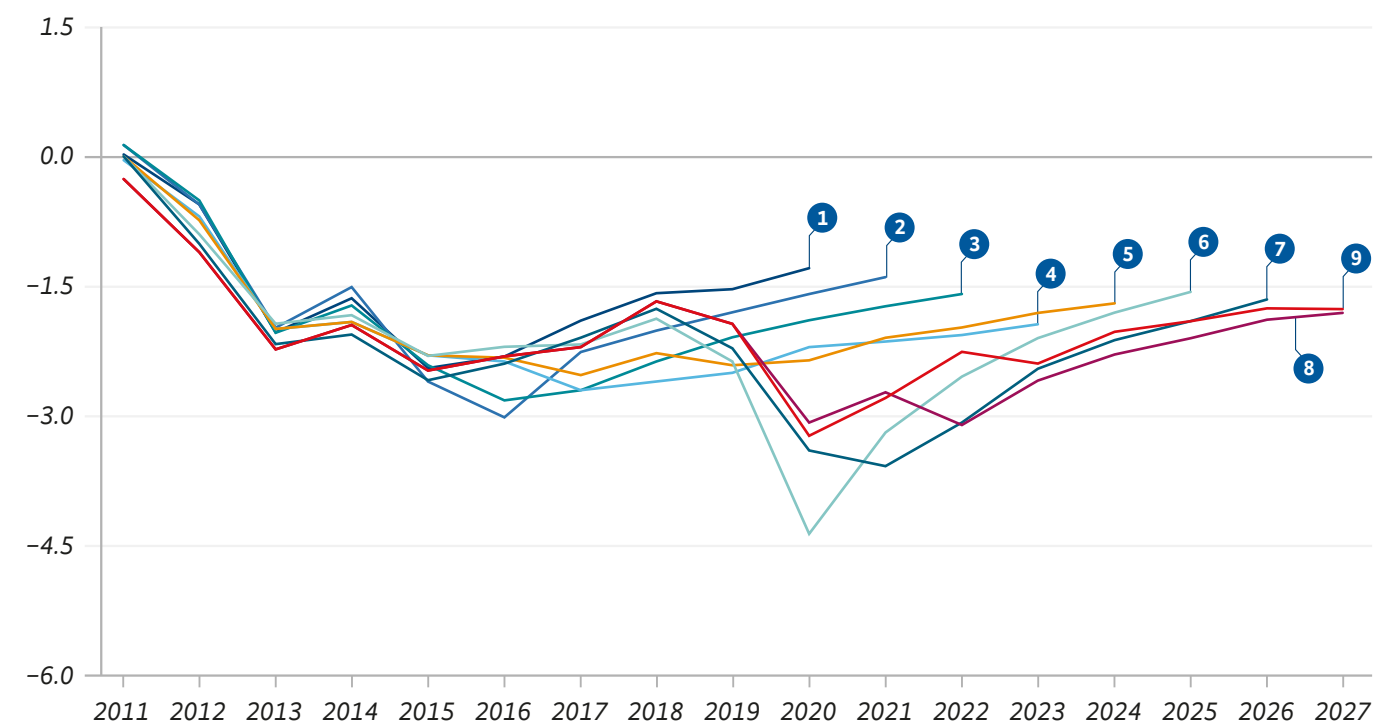
Medium-term primary deficit (% of GDP)

Figure 6

Emerging markets and middle-income countries



Low-income developing countries



- 1 — IMF Oct 2015 2 — IMF Oct 2016 3 — IMF Oct 2017 4 — IMF Oct 2018 5 — IMF Oct 2019
- 6 — IMF Oct 2020 7 — IMF Oct 2021 8 — IMF Oct 2022 9 — Actual/latest forecast (IMF Apr. 2023)

Sources: Author's compilation based on data from IMF Fiscal Monitor reports.

While the realities of scarring effects are recognised in the literature, current DSA frameworks do not feature a stress test scenario nor capture the impact of large shocks with scarring effects at the magnitude of the Covid-19 crisis. Currently, the DSA frameworks have stress tests for: 1) shock on output growth over two years; and 2) combined or most extreme shock scenario (not exclusively due to output shocks)¹¹ – but the following analysis shows that both of these shock scenarios fail to capture the effects of Covid-19.

For instance, the standard DSA output shock scenario reduces GDP growth by one standard deviation computed over the last 10 years. Based on this, Table 4 illustrates that, prior to Covid-19, the DSA framework for emerging market and developing economies would have generated

3.5 per cent real annual GDP growth under the output shock scenario. However, actual GDP growth was –1.8 per cent during the Covid-19 pandemic in 2020. In this case, reducing real GDP growth forecast by 5.5 standard deviations would have generated a closer estimate (–1.5 per cent GDP growth) to actual performance (–1.8 per cent GDP growth) during the Covid-19 shock episode.

Even under the most extreme shock scenario, debt projections may still be optimistic. Table 5 summarises public debt estimates in selected countries¹² in the event of significant shocks based on ‘extreme’ or ‘combined’ shock scenarios in the DSAs conducted prior to the Covid-19 crisis, compared with realised public debt levels in 2022. It shows that while in some countries the forecast public debt ratio

GDP growth under during output shocks

Table 4

Actual vs forecast under stress-test scenario

Basis of GDP shock scenario			
	LIC-DSA	MAC-DSA	MAC-SRDSF
Medium-term GDP shock – stress test scenario	Real GDP growth set to its historical average over the last 10 years minus one standard deviation; or the baseline projection minus one standard deviation, whichever is lower for the second and third years of the projection period.	Real GDP growth is reduced for two years by one standard deviation based on the last 10 years’ outturns	Real GDP growth is reduced for two years by one standard deviation based on the last 10 years’ outturns

2020 GDP growth (%): Actual vs GDP shock scenario for emerging markets and developing economies (EMDEs)		
A	Pre-Covid19 (IMF WEO Oct 2019) GDP forecast for 2020	4.6
B	Standard deviation (2010–2019)	1.1
C	GDP shock scenario (A–B)	3.5
D	Actual GDP growth in 2020	–1.8
E	Forecast error in GDP performance between actual (Covid19 shock) and predicted output shock scenario	5.2 (percentage points)

Source: Author’s compilation/computations based on IMF DSA frameworks and IMF WEO data.

¹¹ It may be noted that the ‘most extreme shock scenario’ is included in standard stress tests scenarios in MAC-DSF but not in MAC-SRDSF currently in effect.

¹² Selected countries are those which have been assessed to have unsustainable debt or classified to be at high risk of or in debt distress (for LICs), or with sustainable debt but not with high probability (for MACs) as of 2021/22. Based on latest IMF country DSA reports. Egypt was assessed to have sustainable debt but not with high probability (July 2022); El Salvador (January 2022) Malawi (November 2022), Sri Lanka (March 2022) and Zambia (August 2022) were assessed to have unsustainable debt; Tunisia (February 2021) was assessed to have unsustainable debt without enacted reforms Ghana was assessed to be at high risk of debt distress in July 2021 and with unsustainable debt by May 2023.

Forecast errors in drivers public debt dynamics

Table 5

(actual less forecast, % of GDP)

Selected sample	Year of IMF DSA	DSA framework	Projection year	Projected debt/GDP (%) or PV of debt/GDP ¹		Actual/latest estimate of debt/GDP as of 2022 ^{1/3}	Difference from baseline scenario (percentage points)	Difference from most extreme shock (percentage points)
				Baseline	Most extreme shock ²			
Egypt	MAC DSF	MAC DSF	2018	MAC DSF	2022	78.0	92 ⁴	95.2
El Salvador	2018	MAC DSF	2022	70.3	80.5 ⁴	77.2	6.9	-3.3
Ghana ¹	2018	LIC DSA	2022	39.0	53.0	89.1	50.1	36.1
Malawi ¹	2018	LIC DSA	2022	41.7	50.0	65.5	23.8	15.5
Sri Lanka	2018	MAC DSF	2022	74.9	92 ⁴	128.1	53.2	36.1
Tunisia	2018	MAC DSF	2022	70.1	89.0	79.4	9.3	-9.6
Zambia ¹	2019	LIC DSA	2023	95.1	126.0	112.7	17.6	-13.3

Note: 1/ refers to PV of debt/GDP for LICs and some LMICs; 2/ Most extreme shock as identified in 2018 IMF DSAs: combined shocks for Sri Lanka; 30% depreciation for Ghana; 3/ based on latest IMF DSAs 2022 onwards; 4/ author's approximation of debt/GDP in 2022 based on graphical presentation in DSA report.

Source: Author's compilation/computations based on IMF DSA report.

(as percent of GDP) under combined shock scenario came close to the actual public debt ratio during the realised shock in 2022, the discrepancy between forecast and actual debt levels could still be up to 16–36 percentage points of GDP (in Malawi, Ghana and Sri Lanka).

This raises implications regarding the question of whether the current DSA frameworks contain a stress test scenario or realism tool that can help flag the potential debt implications of large and overlapping shocks. In normal circumstances, extreme shock scenarios may not get traction as they may be viewed as very low probability (e.g., global pandemics may occur rarely over a hundred of years); or may be viewed as pessimistic because countries do not experience large shocks all the time¹³.

However, given that large shocks may push up debt to unsustainable levels, it may be warranted to automatically and consistently activate an extreme shock scenario in DSAs when such events occur, to assess the largest shock that could be tolerated before debt becomes unsustainable, and to act as a trigger to take early actions (e.g. debt reprofiling, debt restructuring, and/or implementing targeted fiscal policies).

The next sub-section will investigate whether the absence in the rule in the standard stress tests of any measurement of the impact of large shocks and anticipated scarring effects from the Covid-19 pandemic and the Russia- Ukraine war, is compensated for by a heightened judgment in DSA reports.

¹³ Expressed views through written feedback from reviewers and some experts during a roundtable discussion in September 2023.

4.3 Judgement in DSAs during the recent crises

The DSA frameworks recognise that mechanical rules may be insufficient to fully capture country-specific circumstances. This is even more evident in the context of unprecedented shocks, since the realism tools assessing the credibility of the baseline scenario are largely based on historical data or cross-country comparisons. In such contexts, it is expected that the DSAs will utilise more judgement to complement the limitations of mechanical rules.

By analysing DSA reports for Ghana in 2019–2023, this sub-section investigates whether judgement was heightened to flag the debt sustainability implications of the overlapping crises of the Covid-19 pandemic and the Russia-Ukraine war. In particular, the level of judgement is examined with regard to key elements of the DSAs rather than in the overall risk rating of debt sustainability, under the assumption that the final ratings are based on how judgement was used during the assessment process.

The areas investigated for the presence (or absence) of judgement focused on three areas raised in this paper to be relevant in the context of multiple crises:

Macroeconomic projections in baseline scenarios

1. Were fiscal multipliers (e.g. by size, persistence, fiscal policy instruments) considered during the recent shocks?

Stress-test scenarios

2. Did the DSA reports revise/customise stress test scenarios to reflect the large shock from pandemic?
3. Did the DSA reports customise stress test scenarios for longer-term effects (scarring effects) of large/ overlapping shocks?

Implication of debt profile

4. Did the DSA reports flag/consider heightened risks that may emerge from financial tightening (e.g. capital outflows, market access loss, higher domestic borrowing) and debt profile (e.g. variable interest rates, foreign-currency denomination of debt, creditor type, maturity)?

Appendix 2 provides the detail of the assessment for Ghana. The above questions were examined while explicitly linking them to the context of the recent shocks. In question 5, for instance, a commodity price shock may be customised for Ghana, but if this shock scenario was not explicitly linked to the recent crises (i.e. the Covid-19 pandemic and/or the Russia-Ukraine war, and/or their resulting macro-fiscal pressures from spillover effects), then it will be assessed that the DSA judgement was not heightened in the context of these crises.

The assessment shows that the DSA reports did not discuss fiscal multiplier considerations in Ghana's baseline scenario before the crisis (i.e. in 2019), neither did they step up to offer judgement on alternative fiscal multipliers appropriate in the context of the pandemic (in 2020).

In the latest DSA report in May 2023, in the middle of Ghana's macro-fiscal crisis, the DSA baseline scenario recognises the expected contractionary growth effects of fiscal adjustment and debt restructuring over the medium term (negative fiscal multiplier from consolidation). Despite this, the DSA still recommends a large and frontloaded primary balance adjustment of 5 per cent of GDP up to 2025, justified on the basis of government commitment and despite prior historical optimism in fiscal adjustment forecasts.

The above recommendation counters an earlier IMF report, suggesting that *'More gradual adjustment can be particularly beneficial in a high-multiplier crisis, postponing part of the adjustment to a point in time when multipliers will be lower.'* (IMF 2019: 29). Disclosure of how fiscal multipliers are considered in assessing the impact of Ghana's expenditures and public investment on growth might help better assess (or justify) the feasibility of a suggested fiscal adjustment.

Meanwhile, the IMF stepped up its stress tests for Ghana during the onset of the pandemic (April 2020) by implementing higher magnitudes of growth and exchange rate shocks than were indicated in standard scenarios. However, it is lacking in offering any scenario including the debt sustainability implications of scarring effects (i.e. persistent output losses), which is highly relevant in light of the external and domestic shocks faced by Ghana.

While the DSA reports flag debt sustainability risks that may emerge from Ghana's debt profile, the emphasis seems to vary depending on the stage of Ghana's business cycle. The DSAs recognised the increasing market access of Ghana (e.g. Eurobonds account for around a quarter of external debt; 27 per cent of domestic debt was held by non-resident investors as of 2019) even before the Covid-19. In 2019, the DSA provided a balancing view of the opportunities from diversification of financing sources and risks from responses of investors amid heightened domestic or global uncertainty but seems to lean on the positive by citing market access as a contributing factor to debt sustainability.

When the Covid-19 pandemic hit, the DSA was silent on debt profile, and instead highlighted a more generic view that potential prolonged global slowdown from the pandemic may have adversely affected private transfers, investment and the exchange rate. By 2021, the DSA tilted to risks emerging from rising local currency debt with shorter maturities and high interest rates, combined with tighter terms on Eurobonds, but still encouraged maintaining high levels of market access to contain interest and rollover risks. At this point, it seems counterintuitive for the DSA discussion to encourage maintaining a high level of market access when market sentiment was already worsening. By late 2021 and early 2022, the Eurobond spreads were widening and non-resident domestic debt investors exited Ghana – and rollover and liquidity risks materialised. In May 2023, the DSA baseline scenario assumes that Ghana would not

have market access until 2027, and that most financing would come from the IMF, the World Bank and bilateral partners.

Ghana's case highlighted the limitations of not utilising more judgement in the presence (or threat) of large global shocks. The lack of DSA discussion regarding appropriate fiscal multipliers in times of recession and restructuring, and the added downward risks from implementing reforms in the context of dealing with scarring effects, put into question the feasibility of implementing the DSA's suggested levels of primary adjustment and realisation of expected results on debt stabilisation over the medium-term. Future analysis over a large sample of case studies may validate the assessment in this sub-section, but Ghana's case provide early evidence building the case to provide DSA analysts with supplementary guidance on using judgment when there are large global shocks.

5. Conclusions

This paper reviews the IMF DSA frameworks, the performance of the IMF's growth and debt forecast, and the limitations of such frameworks in the context of large and overlapping global shocks.

The review of literature and supporting descriptive analysis highlight the persistent optimism bias in IMF growth and debt projections (being utilised in DSAs), with larger forecast errors in LICs. These errors have significantly widened since the unprecedented shock of the Covid-19 pandemic.

Looking deeper at drivers of debt dynamics, five case studies show consistent optimism with regard to the primary deficit, driven by higher expectations from revenues, since most countries were able to perform expected (or higher-than-expected) reductions in fiscal expenditures, at least before the pandemic began. The debt-reducing effect of GDP growth was also mostly overestimated. These trends confirm the underestimation of negative fiscal multiplier effects from fiscal consolidation as a source of optimism bias. Meanwhile, in the case of Ethiopia the contribution of growth to reducing public debt was underestimated in most years. Ethiopia's case resonates with the other focus of fiscal multiplier literature – potentially underestimating the expansionary impact from certain types of public spending, particularly on public investment.

The above observations provide a backdrop to an examination of the limitations of the DSA frameworks, and suggest four areas that need to be incorporated in the frameworks to increase their relevance in the context of multiple shocks:

5.1 Growing commercial sources of debt in LICs.

Forecast errors have been consistently wider in LICs than in MICs. This phenomenon might be driven by the limitation

of the distinguishing factor between LIC-DSF and MAC-SRDSF, whereby LICs are assumed to secure most of their financing from external sources under concessional terms. However, commercial sources have been growing in many LICs since the early 2000s. In this context, key features of the MAC-SRDSF such as using the nominal value of total debt as an indicator of solvency, near- and medium-term liquidity risk assessment for changes in risk premia and potential capital outflows associated with the behaviour of the non-official debt profile during shocks may also be appropriate for the LIC-DSF.

5.2 Fiscal multipliers.

The DSA frameworks only consider fiscal multipliers as a realism tool (i.e. to be applied after baseline scenarios have been projected), but do not provide information on using relevant multipliers that could account for the feedback effects of fiscal policy within the baseline scenario. In addition, fiscal multipliers are only considered in terms of the contractionary effects of fiscal adjustment. However, fiscal multiplier effects vary by the direction of policy intervention (i.e. contractionary vs expansionary), the type of instrument used, the current stage of the business cycle and the country context. Fiscal expansion in the form of spending on high-quality public investment and high-multiplier sectors (e.g. health, social protection, infrastructure) can help generate economic growth during recessions and economic recovery after shocks. While the LIC-DSF considers the growth-investment nexus, it only accounts for public investment's contribution to capital but not its economy-wide productivity effects.

Accounting for appropriate fiscal multipliers in DSAs may help guide policymakers on the timing and targeting of both fiscal and debt management strategies (e.g. securing concessional debt for growth-enhancing investment) and scrutinise debt sustainability not only based on the level of fiscal adjustment and public debt, but also based on the quality of the use of debt for economic recovery from shocks.

5.3 Extreme shocks and scarring effects.

The recent global crises (the global financial crisis, the Covid-19 pandemic) provide evidence that large shocks have protracted growth effects many years after a crisis. The DSA frameworks' extreme shock scenarios fell short of estimating the realised growth shocks from Covid-19 and lack longer term debt sustainability risk assessment for prolonged output losses. By activating and consistently applying an extreme shock scenario (e.g. by using global financial crisis/Covid-19 impacts as benchmarks) when a large crisis arise, the DSA can serve as an early warning tool to assess the largest shock that could be tolerated before debt becomes unsustainable, and therefore trigger early actions such as reprofiling commercial debt and obtaining cheaper and longer-term official financing.

5.4 Greater role of judgement in DSAs during multiple global shocks.

The DSA exercise is not an exact science and inevitably requires judgement – more heavily so in the context of multiple crises. In Ghana’s case, it seems counterintuitive to encourage maintaining a high level of market access amid worsening market sentiment in the DSA as of 2021, when securing concessional and longer-term loans might have helped ease liquidity and rollover risks before they materialised in 2022. The latest DSA as of May 2023 is also underpinned by a projected large fiscal adjustment of 5 per cent of GDP until 2025, which contradicts the earlier IMF (2019) stance on the benefits of undertaking a more gradual adjustment during high-multiplier crises. Ghana’s case provides early evidence of the need for the IMF/World Bank to provide supplementary guidance on the use of judgement when there are large global shocks.

Broadly, enhancements of the above elements are recommended to improve the appropriateness of DSAs during large global shocks as a tool to inform governments of policy mix options and scenarios (beyond traditional fiscal consolidation) that can support an economic recovery that is compatible with sustainable debt, and to give more confidence to international institutions in extending financing to support such a targeted policy mix.

Appendix 1. Comparison of DSA frameworks for market-access and low-income countries

Components	IMF SRDSF (latest for MAC)	IMF MAC DSA	IMF and World Bank LIC DSA
Definition of sustainable/unsustainable debt	Unsustainable debt occurs when there are no politically and economically feasible policies that stabilise the debt-to-GDP ratio and deliver acceptably low rollover risk without restructuring and/or exceptional bilateral support, even in the presence of Fund financing. (IMF 2022, p.6) Related: Sovereign stress refers to an event (e.g. jumps in spreads, loss of market access, etc) where market and/or fiscal pressures related to public debt become acute. No presumption on whether or how those pressures can be resolved. Debt non-stabilisation under the baseline describes a situation in which a country's debt/GDP ratio is not expected to stabilise under the best prediction of policies by the end of the projection horizon. ...While an explosive debt trajectory implies that current and projected fiscal policies are unsustainable, there may be feasible adjustment policies which would stabilise the debt if implemented.	Public debt can be regarded as sustainable when the primary balance needed to at least stabilise debt under both the baseline and realistic shock scenarios is economically and politically feasible, such that the level of debt is consistent with an acceptably low rollover risk and with preserving potential growth at a satisfactory level. (IMF 2013 p.4)	Sustainability would imply that the debt level and debt service profile are such that the policies needed for debt stabilisation under both the baseline and realistic shock scenarios are politically feasible and socially acceptable, and consistent with preserving growth at a satisfactory level while making adequate progress towards the authorities' development goals. (IMF 2018: 47)
Coverage	Default coverage is the general government (GG) consisting of the central government, and all units at the state, provincial, regional and local level as well as any nonmarket, nonprofit institutions controlled by these entities. → Justification required for narrower coverage → Broader coverage of public-sector debt (i.e. beyond GG, also including non-financial and financial public sector corporations and central bank) in some cases → Disclosure requirements on coverage definitions, debtholder profile, and guidance on certain instruments (like swaps)	→ Public-sector debt coverage to be as broad as possible (may be narrow in some cases) → No disclosure requirement on coverage	→ Public-sector debt coverage to be as broad as possible (may be narrow in some cases) → Coverage of public-sector debt is reported in the DSF table, and narrower coverage automatically triggers an additional contingency liability stress test
Horizon	→ 10-year debt and gross financing needs (GFN) projections for all cases → Risk assessments for near- (one-two years), medium- (five years) and long-term (beyond five years) horizons	→ five-years projections (no distinction in horizons)	→ Medium-term (up to five years) and longer term (beyond five years) projections
Realism tools	→ Nine realism tools covering projections on output, debt drivers (forecast track record, factors affecting large shifts of debt drivers, comparison with other MACs) and exchange rates, as well as assumptions on fiscal adjustments, fiscal adjustment and growth relationship, and public debt profile and financing terms.	→ Three realism checks covering growth (forecast track record, and boom-bust cycle considerations), inflation and primary balance (level and fiscal adjustment). → Scrutiny of financing assumptions under the baseline scenario if the country faces debt sustainability risks from its debt profile (e.g., signalled by benchmark indicators from other MACs)	→ Four realism tools covering debt drivers, planned fiscal adjustment, fiscal adjustment and growth relationship, and public investment and growth relationship.

Components	IMF SRDSF (latest for MAC)	IMF MAC DSA	IMF and World Bank LIC DSA
Near-term risk indicators	→ Measures the likelihood of sovereign stress through multivariate logistic regression models producing fitted probability of stress, based on 10 indicators covering four categories: structural characteristics (including stress history), cyclical position, debt burden and buffers and global conditions → Mechanical signal of stress probability split in low, moderate, and high-risk zones → Act as early warning system, and does not signal whether debt is sustainable or not	→ Assesses risks to debt sustainability (but not debt sustainability rating) based on 'benchmarks' indicating levels of debt burden and debt profile indicators that best predict the occurrence of debt distress event. Benchmarks are based on sample-specific medians of AEs and EMs. Performance against benchmark act as early warning signal of emerging risks. → Mechanical signal of low, medium and high risks and presented in a heatmap for debt level, gross financing needs, and debt profile, respectively. But there is no aggregated/overall signal.	→ Near-term assessment is not a standard part of DSA. But near-term assessment for market financing pressures (MFP) only for countries with substantial access to market financing provides early warning signal of potential risks. → The MFP tool measures liquidity needs by projecting gross financing needs over 3 years and current market sentiment (EMBI spreads) against benchmarks. → Unclear basis of benchmarks and thresholds for market financing pressures.
Medium-term risk indicators	Debt fanchart tool → The fanchart focuses on solvency risks emerging from a country's debt burden over the next five years. The fanchart presents debt dynamic trajectories using debt dynamics equation and randomly drawn shocks to key variables (e.g., debt/GDP, interest rates, GDP growth, primary deficit, exchange rate, domestic and foreign inflation) in the equation; and capture correlations among drivers and their persistence in the next five years by using block bootstrapping method. → Debt fanchart shows three indicators: i) degree of certainty around the projected baseline indicated by the fanchart width; ii) probability of debt non-stabilisation in the medium-term; and iii) terminal debt to GDP adjusted for quality of institutions. → A debt fanchart index (DFI) is produced based on 3 indicators weighted by predicted power, and index value is split into low, moderate, and high-risk zones Gross financing needs (GFN) tool → The GFN tool assesses the country's liquidity risks over the country's ability to meet its GFN over the medium-term. It examines: i) country's financing needs; ii) debt holders and new financing instruments across creditor groups; iii) domestic banking system (if it can act as a residual creditor during shocks). It features the generalised stress scenario covering macro-fiscal, maturity shortening and debt holder shocks. → It produces three indicators (iii) average projected GFN/GDP in baseline; (i) initial (current) bank exposure to the government; and (iii) change in bank claims on the government under a generalised stress scenario. → A gross financeability index (GFI) is produced based on 3 indicators weighted by predicted power, and index value is split into low, moderate, and high-risk zones * The DFI and GFI produces an aggregate index and feeds into final medium-term risk signal: low/moderate/high.	Fanchart tool → The fanchart showing probabilistic view of the evolution of debt-to-GDP ratio over the medium term, incorporating feedback between macroeconomic variables that drive the debt dynamics. Both symmetric fan chart (equal treatment of upside and downside risks) and asymmetric fan chart representing best assessment of likelihood of shocks. → No signal of risks Macro-fiscal shocks/stress tests → Assesses the impact of macro-fiscal risks to debt dynamics, by assessing the implications to debt sustainability by shocks to 4 main variables - primary balance, growth, interest rate, exchange rate and a combined shock (of the above variables). A contingency liability stress test may also be activated. → Effect of shocks to each indicator: primary balance, real GDP growth, real interest rate, and contingent liability (if activated) on debt and GFN levels are reflected in heat map mechanical low/moderate/high risk signals. * The fan chart tool and macro-fiscal chart does not produce an aggregate signal of risk over the medium-term	Macro-fiscal shocks/stress tests → Assesses the impact of temporary shocks on the evolution of debt burden indicators in both external and the overall public DSA. → The most extreme stress test informs the calculation of the mechanical risk signal (low/moderate/high risk) of debt distress and where the test leads to a breach of the DSA threshold. → The debt and debt service threshold are based on a country's debt carrying capacity (i.e. weak/medium/strong), which in turn is based on a composite index of different factors (i.e. World Bank's Country Policy and Institutional Assessment (CPIA) score, the country's real GDP growth, remittances, international reserves, and world growth).

Components	IMF SRDSF (latest for MAC)	IMF MAC DSA	IMF and World Bank LIC DSA
Standardised stress tests	→ Macro-fiscal covering GDP growth, interest rate, exchange rate, inflation, primary balance → Debt maturity shortening shock → Debt holder shock (rollover rate, new financing)	→ 5 stress test covering 1) real GDP growth, 2) primary balance, 3) interest rate, 4) exchange rate and 5) combined shocks (incorporating only the largest effect of individual shock on relevant macro variables).	→ 7 standardised stress test covering shock on 1) GDP growth, 2) primary balance, 3) exports, 4) other flows, 5) depreciation, 6) a combined shocks (apply all individual shocks 1–5, at half of the magnitude), and 7) historical scenario.
Triggered stress tests	→ Contingent liabilities shock related to narrow public debt coverage, banking crisis, natural disasters, commodity price shocks, and exchange rate shock. → Allows for customised stress-tests for idiosyncratic risks.	→ Contingent liability shock if quantitative trigger for risk of banking crisis is triggered → Allows for customised stress-tests for idiosyncratic risks.	→ Contingent liabilities shock related to narrow public debt coverage → Allows for customised stress-tests for idiosyncratic risks
Long-term risk analysis	→ Optional tools for risks from: population aging, natural resource discovery/depletion, debt amortisations; and climate change.	→ Optional extension beyond five-year horizon for specific circumstances such as population aging, ballooning debt service or other considerations.	→ Long-term projections (beyond five years) included in standard DSA report, to reflect spending patterns related to SGDs, stage of development, real exchange rate equilibrium, and other country-specific factors (e.g. natural disasters, conflict)
Judgement and communications	→ Judgment-based risk assessments at each horizon in cases where mechanical signal is counter-intuitive. A list of considerations/factors (e.g. borderline results, conflicting results, distorted variables, omitted factors, country track record) is provided for using judgement. → Judgement-based overall risk assessment, residing within the range of assessments the near-, medium- and long-term assessments based on user judgment; otherwise, strong reasons for a different overall assessment is required. → Bottom-line assessment of risk of sovereign stress (low/medium/high) and debt sustainability (sustainable with high probability/ sustainable but not with high probability/unsustainable).	→ No aggregate mechanical signals → Lack of standardised bottom-line assessments → Unclear application of judgement (based on team's discretion/tailored assessment)	→ Bottom-line assessment of external debt and overall debt distress (low/medium/high) → Allows for use of judgement, with a list of factors/cases to consider (e.g. existing arrears/restructuring, one-off/marginal threshold breaches, private external debt, long-term consideration)

Appendix 2. Ghana: Judgement in DSA reports during the recent crises

Pre-Covid19		Years with overlapping crises		
November 2019		April 2020	July 2021	May 2023
Macroeconomic projections in baseline scenarios				
1. Were fiscal multipliers (size, persistence, by fiscal policy instrument, by business cycle) considered in medium-term growth projections?	No Fiscal multipliers were only included in chart presentations as part of the realism tools (after the baseline). There were no discussion on fiscal multipliers, nor reason why the growth projections were beyond the expected growth path from typical fiscal multiplier sizes assumed under the DSA.	No	No Fiscal multipliers were not explicitly considered in baseline scenario projections. Fiscal multipliers were presented as part of realism tools, and discussed that the expected disconnect between projected higher fiscal adjustment and accelerating growth were justified by anticipated Covid19 rebound (see pages 5–6).	Partially The DSA baseline scenario cited the expected contractionary effects of fiscal tightening and debt restructuring on growth until 2025. The DSA also assumes recovery to long-term growth potential by 2026 when the drag of fiscal consolidation slows (see p.7), on the back of the projected fiscal consolidation efforts are justified by the government's demonstrated commitment to the fiscal adjustment to restore fiscal sustainability and macroeconomic balances, despite IMF's historical optimism in fiscal adjustment forecasts. (pp. 12–13) The DSA report did not cite specific fiscal multiplier size or persistence considered for the baseline scenario.
Stress-test scenarios				
2.1 For pre-Covid: What were the most significant (stress-test) shock/s that would affect the debt sustainability outlook?	→ Public debt to GDP ratio breached thresholds under all standard shock scenarios. → Commodity price shock was the most severe shock scenario for both public debt-to-GDP and public debt service-to-revenue ratios.	Yes → Standard stress tests were augmented to reflect a possible scenario with a stronger outbreak and protracted national lock-down. The growth shock was increased to 2 standard deviations (instead of usual 1 standard deviation) and exchange rate depreciation was increased to 40% (instead of usual 30%) (p.21) → The inclusion of the contingent liability stress test at 5% of GDP was judged to be adequate to cover additional financial sector costs from the impact of Covid19. (p.21) → Stress tests showed that exchange rate depreciation, export and commodity prices shocks might have the greatest impact on debt sustainability. (p.22)	No	No
2.2 For crisis years: Did the DSA reports revise/customise stress test scenarios to reflect the large/overlapping shocks?				

	Pre-Covid19	Years with overlapping crises		
	November 2019	April 2020	July 2021	May 2023
Stress-test scenarios				
3. Did the DSA reports customised stress test scenarios for medium/long-term effects (scarring effects) of large/overlapping shocks?	No	No The DSA did not include a separate stress test scenario for scarring effects of Covid19. It provided a commentary that the DSA shock scenarios are likely exaggerated the impact on debt indicators over the medium-to long-run given that, once the Covid19 emergency is solved and the elections are over, stressors such as risk premia, low commodity prices, and weak domestic revenues are expected to improve significantly (p. 21)	No	No This 5% growth rate that is projected to be sustained over the long-term, is based on the assumption related to Ghana's growth-enhancing structural reforms under the Government Post Covid Program for Economic Growth, which can boost productivity and help attract private investment - offsetting the short-term impact of the crisis on the economy.
Implication of debt profile				
4. Did the DSA reports consider/flag heightened risks that may emerge from financial tightening (e.g., market access loss, higher domestic borrowing) and debt profile (e.g. variable interest rates, foreign-denominated debt, creditor type, maturity, etc)?	Yes The DSA flagged that while market financing provides an opportunity to diversify financing sources and fine-tune the risk profile, it also exposes Ghana to spillovers from investors rebalancing their portfolios in response to weakening domestic policies and stresses in other emerging markets or global risk dynamics.	Yes The DSA flagged that deeper global slowdown could trigger greater impact on private transfers and investment (and oil prices) which could weaken the exchange rate; and could create additional liquidity risks into 2021. (p.21)	Yes The DSA highlighted that to contain interest costs and rollover existing external debt, Ghana will need to maintain market access at the same level as in 2019–21 (Eurobond worth \$3 billion). It flagged that continued dependence on market access exposes Ghana to sudden changes in market sentiment, whether country-specific or affecting emerging and frontier markets more broadly. (p.7)	Yes The DSA baseline scenario assumes that Ghanaian government will not regain external market access until 2027. External disbursements over the period 2023–26 are limited to the World Bank, IMF, and other bilateral development partners (p.10)

About the author

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Chapter 2

How to Ensure Debt Sustainability Accelerates Sustainable Development

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Summary

One complaint about the Bretton Woods Institutions' (BWI) debt sustainability frameworks that is strongly raised by International Monetary Fund (IMF) member states, academic and independent analysts, and civil society, is that they are not fully compatible with the National Sustainable Development Plans countries have adopted to reach Agenda 2030, or with the National Defined Contributions/National Adaptation Plans adopted to confront the climate crisis. Drawing on steps taken by the BWIs to adapt to the Sustainable Development Goals (SDGs), as well as independent methodologies developed by other analysts, this paper proposes ways in which debt sustainability analysis (DSA) methodologies could be more fully adapted to the SDGs.

It begins by making the case for why such adaptation is urgently needed, and then deals with three issues: i) adapting DSAs to overall SDG spending needs; ii) adapting DSAs to urgent environmental crises (climate change adaptation, nature and biodiversity collapse, and natural disasters); and iii) adapting DSAs to urgent social crises (rising extreme inequality and poverty, and global pandemic health events).

The paper pays particular attention to feasibility and ease of implementation of the proposed changes, so that they do not overburden BWI staff or government officials working on the analysis and are immediately practicable and actionable. They can therefore relatively easily be fed into the forthcoming review of the Low-Income Countries Debt Sustainability Framework (LIC-DSF), and of the Staff Guidance Note and tools for the Sovereign Risk and Debt Sustainability Framework (SRDSF) for Market Access Countries (MACs). The paper ends by urging that the reviews should emphasise the high positive multipliers SDG spending can have on growth and explore how they can be funded by enhancing non-debt and lower-cost financing. It also urges the BWIs to keep a much closer eye on total public (external and domestic) debt-service burdens to avoid crowding out key spending for the SDGs and to accelerate the provision of rapid liquidity relief on debt where needed.

1. Introduction

In 2015, all the world's governments agreed on Agenda 2030 and the Sustainable Development Goals (SDGs). These have since become the basis for all national development plans and goals, especially in countries of the global South, covering the period 2015–2030. Both of the Bretton Woods Institutions have integrated the SDGs into their work programmes. The World Bank already has two SDGs (1 – end poverty, and 10 – reduce inequality) as its core goals for its own operations, and is in the process of adding a climate

goal and strengthening its inequality goal (World Bank 2024); and the IMF has framed much of its recent work around adapting to and being compatible with the SDGs, notably on confronting the climate crisis, promoting gender equality and reducing inequality, because of the strong negative impact such factors have on its mandate of promoting growth and financial stability (IMF 2023).

Yet until 2020 for low-income countries (LICs) and 2022 for “market access countries” (MACs), debt sustainability analysis by the BWIs remained stuck in a world which took virtually no account of Agenda 2030. While the SDGs implied a doubling or trebling of government spending in many countries (Sachs and Schmidt-Traub 2014), the BWIs did not go beyond calculating some extra spending needs in a few countries and developing a toolkit for doing similar work in other countries. They failed to finish the work by indicating at country level how such spending needs could be financed without compromising debt sustainability and by helping countries mobilise funding on the basis of such SDG scenarios. Faced with massive additional spending needs, especially as it became clear the world was failing to mobilise the financing for them, they reverted back to “incrementalism” (small increases in spending) in country fiscal frameworks, and limited DSAs to analysing the risks of default arising from such frameworks and/or changes in macroeconomic prospects/financing costs, rather than as identifying how to finance sustainable development.

This was an entirely “unsustainable” position. According to the Intergovernmental Panel on Climate Change (IPCC) forecasts, countries like Tuvalu or Chad have little sustainable future unless they make plans NOW to combat the climate crisis, with plans that are sustainably funded. Many countries are potentially vulnerable to the climate crisis undermining their growth prospects and economic stability. In the same way, IMF and World Bank research has shown many times how extreme poverty, income inequality and gender inequality are undermining growth in many countries (on inequality, see IMF 2014 and 2017; on poverty see World Bank 2018). These negative impacts are not limited to individual countries: to the degree that life becomes less tenable and extreme poverty and inequality more widespread in many countries of the global South, there will also be higher levels of cross-country migration and insecurity across the world.

The failure to ensure that SDG spending was adequately funded and therefore increasing – or that debt service was being kept at reasonable levels where countries were trying to spend more on the SDGs – meant that by 2023 Global South countries were spending much more on debt service than on key SDG sectors. According to the Debt Service Watch¹⁴ database, debt service in 2023 is almost exactly equal to total SDG core social spending (on education,

¹⁴ Debt Service Watch is a database compiled by Development Finance International and launched in late 2023, which tracks debt service and spending on the core social and environmental SDGs, across all countries which borrow from the World Bank. It differs from other debt service data in that it covers both external and domestic debt service and is compiled in real time as soon as budget documents and debt management reports are released by developing countries, so that current data are for 2023. Development Finance International (2023a) presents its overall debt and social sector findings, and the summary database; and Development Finance International (2023b) presents its findings on debt service and climate adaptation spending.

health and social protection) across 139 countries borrowing from the World Bank. In Africa and LICs, it exceeds social spending by almost 50 per cent. Looking at individual sectors, debt service is on average 2.5 times education spending, 3.7 times spending on health and 11 times social protection expenditure. The relationship with climate spending is equally startling (partly because delivery of climate finance via government budgets has been very low): on average across 42 countries for which data are available, debt service is 12 times climate adaptation spending in 2023, rising to 13 times in 2024.

Put more positively, as discussed in detail below, investments to combat the dual crises of climate and inequality for a genuinely just green transition – and to prevent or recover rapidly from future catastrophic events such as natural disasters or health pandemics – provide the best prospects of highest returns and a path to dramatically accelerated growth in most countries, much better than expected outcomes from traditional infrastructure spending. To the degree that these effects are not being demonstrated in debt sustainability analysis, they are being ignored and governments are not being encouraged to mobilise funding to support transformative spending, nor to see how investments in these areas could show a path to greater debt sustainability and borrowing capacity.

The BWIs have recognised this in recent years and begun to adapt their DSAs to these needs, but they still have a long way to go. BWI staff interviewed for this study have recognised that much more could and should be done – on which they are in agreement with member government officials, independent analysts and CSOs. In addition, all stakeholders agree that i) such analysis must take account of limited personnel and budgets in the BWIs (and even more limited personnel in member countries); and ii) it must produce clear and transparent findings for all stakeholders, for which governments and the BWIs can be held accountable.

The remainder of this paper is structured as follows:

- Section 2 looks at the broad issue of adapting DSAs to overall SDG spending and financing needs;
- Section 3 examines what more can be done to adapt DSAs to take account of urgent environmental crises confronting the planet (focusing on the climate crisis – SDG 13 – but also emphasising biodiversity and the marine environment – SDGs 14 and 15);
- Section 4 examines how to adapt DSAs to take account of urgent social crises, as exemplified by the extreme inequality crisis (SDG10), which is perpetuating extreme poverty (SDG1) and undermining attainment of all the other social and environmental SDGs;
- Section 5 concludes by drawing together the analysis and prioritising recommendations.

The original outline of this paper envisaged a separate section to deal with how DSAs could incorporate the impact of environmental and social “shocks” such as climate-related natural disasters or pandemics on debt sustainability. However, these events should no longer be considered shocks. In the countries most strongly affected by natural disasters, such events happen at least every two years, and with increasing regularity and frequency across almost all affected countries (see Section 3); and the latest forecasts for pandemics indicate that there is a 14–23 per cent chance of another pandemic happening between now and 2030 (see CGD 2021 and Marani et al 2022). Therefore, this paper suggests that these “shocks” should be considered as forecastable events and included in the baseline scenarios for debt sustainability analysis. Alternatively, they could be included as “stress tests” on the same basis as other likely events, including commodity shocks, changes in financial market conditions, etc. The types of events and how they can be simulated are discussed in each of the environmental and social sections below.

2. Adapting Debt Sustainability Analysis to the SDGs

2.1 Definition and Background/History of Past Efforts

If debt sustainability analysis is to be truly compatible with the SDGs and Agenda 2030, it should involve i) working out at the level of each country how much the SDGs would cost to attain and integrating this fully into government forecasts of financing needs between now and 2030; and ii) working out what financing “terms” governments could afford, to fund these needs while keeping debt sustainable.

Neither of these steps is impossible. Development Finance International (then known as Debt Relief International) helped more than 30 Heavily Indebted Poor Countries (HIPC) to analyse precisely these issues for themselves during 2005–2012 through work under the HIPC Debt Strategy and Analysis Capacity-Building Programme (DSA CBP), funded by seven donor governments and increasingly by the beneficiary governments themselves.

This was achieved by encouraging them to conduct their own DSAs, using as a “high case scenario” the spending needs and financing sources for the then Millennium Development Goals, which in most countries were falling way behind schedule and required accelerated implementation and more concessional financing. In several countries such as Burkina Faso, Rwanda and Tanzania, use of these scenarios at donor Consultative Group and Round Table meetings helped to mobilise much more concessional financing and to accelerate progress on many of the core MDGs. However, in many more countries which had less support from development partners, the high case scenarios were not presented to donors because they were seen as “unrealistic”, i.e. too expensive.

The most ambitious such exercise was undertaken in Bolivia in 2007, funded by GIZ and implemented in partnership with the Centro de Estudios Monetarios Latino-Americanos. It identified how to finance the new government's ambitious development programme, the Plan Nacional de Desarrollo (National Development Plan, NDP): Bolivia Digna, Soberana, Productiva y Democrática para Vivir Bien, 2006 – 2011 (see Gaceta Oficial 2007). This plan was even broader than the SDGs, including wellbeing, community, cultural and religious issues. The workshop identified massive funding needs for the plan, concluded that the prospects for concessional financing were limited, and recommended as the main feasible financing source taxing the hydrocarbons sector heavily (which government did), and feasible amounts of new external and domestic loans.

Methodologically, after initial investment in developing a methodology and forecasting template through global and regional consultations, for each country a two-week workshop building on existing national development plans and Poverty Reduction Strategy Papers, and involving around 30 national staff, was able to cost the NDP goals, and work out a high case scenario to fund them while keeping debts sustainable. The programme was decentralised to regional partner organisations in 2012, after which time its methodology was largely replaced by the LIC-DSF and MAC-DSF.

Efforts have continued to link debt sustainability analysis and the SDGs. The most comprehensive effort to assess country spending needs for the SDGs was undertaken by the UN Sustainable Development Solutions Network (Sachs and Schmidt-Traub 2014). During 2014–2018 they first produced a paper bringing together sectoral assessments of spending needs to estimate total global SDG spending needs, then sponsored a process of bringing together key global experts, including from the IMF and World Bank, covering all the SDGs to refine methodologies for assessing spending needs into tools countries could use. However, this methodology was not taken up by the whole UN system due to lack of funding and was partly included in subsequent IMF work.

The spending needs for many SDGs are currently included in some countries' National Development Plans (NDPs). In some cases, countries have developed the costings themselves; in others (e.g., Benin), the United Nations Development Programme (UNDP) played a key role (assisted by other UN agencies) in making such plans SDG-compatible and helping countries to cost the resulting spending needs. However, such detailed costing efforts were limited to a relatively small number of pilot countries, partly because it

was not obvious where the financing would come from, and partly because UNDP lacked the funds to provide such support in all countries.¹⁵ UN Trade and Development (UNCTAD) has also made efforts to model SDG costs across a much broader range of countries but using estimated shares of GDP which have been derived by other UN sectoral specialist agencies, and mainly in order to look at the global impact of funding the SDGs on worldwide debt sustainability and financing needs (for example, see UNCTAD 2019).

In addition, the IMF has made efforts to cost some of the "core" SDGs for a limited number of countries, and to develop a methodology to replicate this exercise across all countries. This has involved doing two rounds of work on detailed country costings for some of the SDGs (education, health, electricity, water and sanitation, and rural roads). The first was released in January 2019, looking at SDG costings for countries with different income levels, and with detailed case studies of Benin, Guatemala, Indonesia, Rwanda and Vietnam to present different country types (IMF 2019). The second major multi-country study, released in April 2021 and updated to take account of the negative impact of the COVID pandemic on SDG progress and prospects, concluding that even more financing is needed. Case studies were also completed for Cambodia, Nigeria, Pakistan and Rwanda (IMF 2021b).

However, such costings by the different organisations have not generally been included in the key documents used by governments to push donors to mobilise more funding, or to discuss with their own citizens why more tax revenue would be needed to reach the goals. Efforts were made in some early UNDP-sponsored DFAs/INFFs (Benin, Cameroon) to include such costings and identify funding sources, and by the government of Rwanda to use IMF costings to guide donor meetings, but these have not been replicated more recently because the shortage of funding for all SDGs has dominated discussions.

The IMF has also for more than a decade been incorporating second-round effects of investment on accelerating growth into its forecasts of specific economies and policy advice, through separate case studies and model analysis conducted in Article IV¹⁶ documents, Selected Issues papers and other studies.¹⁷ Most of the analytical work conducted with this model has been on the growth impact of large infrastructure project investments but, according to the authors, there is no reason why it cannot also be used to simulate the impact of capital investment, including investment in human capital. What has been missing in all of these analyses is a formal incorporation of their results into the LIC-DSF or the various DSFs for MACs.

¹⁵ The author was involved in discussions of spending needs estimates in Benin, as part of a DFA/INFF mission for UNDP, in which donors were largely dismissive of the idea that the country could find sufficient funds to fund all the SDGs.

¹⁶ Article IV of the IMF Articles of Agreement includes reporting obligations and regular inspection missions.

¹⁷ A good example of this type of model is the Debt, Investment and Growth (DIG) model developed in IMF (2012), which the IMF is still recommending as the simplest way to model the impact of investments on accelerating growth.

2.2 The Way Forward: Integrating the SDGs into DSAs

There is therefore a sound basis on which to integrate the SDGs into DSAs. Four further steps are needed:

1. Make the costing methodologies used by the IMF and other UN agencies for each SDG consistent, so that governments can use results with full confidence that they will be acceptable to all agencies;
2. Include all of the SDGs. Costing methodologies now exist for all the SDGs, and it is essential to broaden coverage beyond the five IMF sectors.
3. Incorporate fully the effects of SDG spending on growth and debt sustainability, including spending on human and environmental capital as well as on physical infrastructure (for more, see Sections 3 and 4).
4. Integrate these costs with financing prospects in the LIC-DSF and SRDSF forecasts as an accelerated “SDG needs and impact” scenario.

There does not seem to be any lack of willingness among the institutions interviewed for this study (or among independent organisations such as SDSN and DFI) to do more of this work, and in a cooperative joint manner. However, all say funding is lacking for work on methodology to be completed and done comprehensively and routinely in all countries.

However, we need to take account of the current context. Even before COVID, the SDGs were way off track in most countries. After COVID, increasing numbers of international leaders and experts have concluded that the SDGs are a pipe dream. Even the UN Secretary General’s SDG Stimulus Plan envisages finding only another US\$500 billion a year in financing. Assuming that this plan succeeds (which many sceptics doubt unless there is a fundamental change in global taxation, debt relief, or ODA efforts), this would mean that we are still US\$1.9 trillion short of annual global spending needs to reach the SDGs. It is also not evident that any new money would go to LICs and LMICs, who need it most and whose share of total ODA has fallen since 2018.

As a result, most countries are going to have to make some very hard choices about which of the SDGs to prioritise. In practice, most countries have already been making such choices through key political pledges by their leaders or parties in election campaigns – for example Benin and Sierra Leone focusing on water, Gabon and Sierra Leone on health. Such choices should not be made by the BWIs or the broader development partner community, but instead

by participatory development of SDG acceleration/stimulus plans, so the priorities chosen may vary by country (though in similar exercises around Poverty Reduction Strategy Papers, PRSPs, there was a remarkable degree of citizen consensus in almost all LICs/LMICs on top priorities: education, health, nutrition/food and water).

On the other hand, it is possible for the international community to provide advice on which sectors might produce the greatest investment multipliers and impacts on growth, as well as advances in sustainable and human development.¹⁸ Here the evidence is clear: investments in a just green transition (i.e. in reaching both the social and the environmental SDGs) produce far higher multipliers than investments in traditional infrastructure, energy, or land/sea use – both directly and indirectly, by reducing inequality and climate damage (see, for example, IMF 2021a and 2017). These greater multiplier effects would enhance countries’ debt-carrying capacity and debt sustainability. On the other hand, failure to deal with the climate and inequality crises would dramatically undermine growth and security prospects, reducing debt-carrying capacity and sustainability. It is for these reasons that the rest of this paper focuses on integrating into DSAs the top priority spending on the environmental and social SDGs.

3. Adapting Debt Sustainability Analysis to Combat the Climate Crisis

3.1 Definition and Background/History of Past Efforts

This is where the IMF and World Bank have made the most advances in adapting methodology, notably in the 2020 Sovereign Risk and Debt Sustainability Framework (SRDSF) for Market-Access Countries.

3.1.1 Adapting DSAs to Climate Analysis: the SRDSF

The SRDSF is the framework which has made the most systematic and comprehensive adaptations (for more details see IMF 2022b), through a climate change module with two “sub-modules”. The first of these models the impact of adaptation investments, which build resistance to the effects of climate change, the second covers climate change mitigation, which involves efforts to reduce greenhouse gas emissions to limit increases in temperatures.

Each sub-module allows projections over a 30-year horizon under two scenarios: an “extended standardised baseline” scenario based on the default costs in the template, and a customised scenario, where users can adjust the costs to country-specific characteristics. The customised scenario also allows users to adjust the financing terms of the climate-related investments, providing scope for example to show the difference between fi-

¹⁸ It is vital to underline that “investments” mean both recurrent and capital spending. There persists in many international agencies a preference for capital spending and an urge to reduce recurrent spending, even when it is obvious from many sectoral studies that in social and environmental sectors, recurrent spending (especially on staff wages, training and maintenance) is as vital as capital spending. See Development Finance International (2016).

financing with non-concessional or concessional debt. It also allows users to adjust the long-term GDP growth path, which in principle would provide space to incorporate the results of the positive growth impact of any just green transition spending.

Each is also based on a clear costings methodology applicable across all countries, reflecting the “currently best set of estimates” by the IMF for individual country costs of adaptation (ranging between 0.3 per cent and 2.4 per cent of GDP for different regions and types of countries – see IMF 2022a) and mitigation (between 1 per cent and 4 per cent of GDP).¹⁹ To facilitate the task of integrating climate adaptation into the DSF, the adaptation module is “pre-populated” with these estimates, making it easy to use while giving the user plenty of flexibility to change the default assumptions.

There is also a clear definition of which countries to analyse:

- For countries which request financing from the Resilience and Sustainability Facility (RSF) of the IMF, both submodules have to be analysed.
- Use of one or both of the modules is also compulsory in pre-defined groups of countries in which the fiscal costs and risks of adaptation or mitigation are expected to be significant.
 - The adaptation submodule is compulsory in (1) the set of countries for which the natural disasters stress test is triggered²⁰ and (2) the top 25 per cent of countries at highest risk from climate change, as judged by an IMF-calculated Adaptation Ranking Index.²¹
 - The mitigation submodule is compulsory for all countries with an ambitious zero net carbon emission target (targeting zero net carbon emissions before 2050), as well as for the 25 largest CO₂ emitters per unit of output, who have yet to set a target.
- Use of the adaptation module is also compulsory in debt-restructuring cases, to provide guidance to teams who need to formulate realistic debt restructuring envelopes – though there is no evidence that as a result more emphasis is placed on restructuring, helping to raise climate spend.

For the remaining IMF member states, use of either module remains optional, based on the views of the authorities and the IMF mission as to the likelihood of high climate risk. However, according to IMF staff interviewed for this study, no country for which the module is not mandated has chosen it as an option.

Furthermore, based on the IMF’s own estimates, the fiscal costs of climate adaptation could be sizeable for many developing countries. If costs are high, this can be supplemented with a second step, the building of a customised country-specific scenario which looks at how these costs can be funded while maintaining debt sustainability. Here, missions are encouraged to look for other sources as estimates of costs. These include studies by the IMF, World Bank, or regional development banks (RDBs); Nationally Determined Contribution (NDC) reports to the United Nations Framework Convention on Climate Change (UNFCCC); or alternative cost proxies based on other countries with similar rankings in the IMF INFORM risk index (see IMF 2024a). This can also include the impact of spending to promote resilience on growth (and on protection and recovery from natural disasters) using the IMF’s Debt-Investment-Growth and Natural Disasters (DIGNAD) model, as has been done for Bangladesh and Rwanda in Resilience and Sustainability Trust (RST) Board papers.²² However, the cost levels presented by the IMF in its Staff Guidance Note are much higher than the standardised scenario, ranging up to 3.8 per cent of GDP for adaptation (50 per cent higher than in the standard scenario) and 14 per cent for mitigation (four times as high as standard), thereby raising the question as to whether the standard scenario is really useful as an indicator of potential costs and risks of climate change for debt sustainability.

3.1.2 Much More Limited Adaptation: the LIC-DSF

In contrast to the major reforms made in the integration of climate into the SRDSF, there has been only very limited progress with the LIC-DSF. Adaptations have been much more limited in scope as follows:

- The impact of climate change is limited to physical risk, such as climate-induced natural disasters, and omits the impact of adaptation, mitigation and resilience spending of the types included in the SRDSF.
- Climate is relegated to a “stress test”, rather than being treated as an extension or modification of the baseline scenario.

¹⁹ These are based on costs for European countries with ambitious mitigation targets as reported to the European Commission.

²⁰ The SRDSF also contains a “natural disaster stress test” – which, interestingly, is triggered for all small state MACs (unlike the LIC-DSF test), as well as MACs with evidence of frequent or severe disasters. This is not discussed here in detail because it is not seen as an adaptation to climate change, but rather an adaptation to natural disasters which could have multiple causes; and because the climate change modules are much better adaptations. For details of the LIC-DSF stress test, see section 3.1.2 below.

²¹ This in turn combines information on (i) propensity to natural disasters, from EM-DAT; (ii) climate-related adaptation cost estimates, from IMF 2022a; and (iii) climate-related adaptation risk, measured by a Composite Index calculated with data from the Notre Dame University ND-GAIN Index, the IMF-INFORM index and the United Nations Institute for Environment and Human Security’s World Risk Index (WRI).

²² As well as IMF working papers for the Maldives, St Lucia and Vanuatu; Selected Issues papers for Solomon Islands, Timor-Leste and Uganda; and Climate Macroeconomic Assessment Program pilots for Madagascar and Samoa. For more details see IMF 2024b.

- It is used only for small states vulnerable to natural disasters as defined by the IMF (20 countries)²³, as well as other LICs that have met a frequency criterion (two disasters every three years) and economic loss criterion (above 5 per cent of GDP per year), based on the EM-DAT database during 1950–2015. The use of such historical data on frequency and severity should also be examined, as all more recent data and forecasts indicate growing frequency and severity, so the analysis might better be conducted for all countries where natural disasters are forecast to be frequent and severe.
- In spite of the fact that country eligibility requires countries to be hit regularly by shocks, the stress test natural disaster shock occurs only in year two of the projection and is not repeated over the longer term.
- For this paper, the author has checked the remaining LIC-DSFs for small states²⁴ for any inclusion of a climate stress test and found none – which stands in marked contrast with repeated and extensive analysis of climate adaptation and resilience spending plans (for example for Cape Verde and Timor Leste) and warnings even in the texts of the DSAs of major unquantified downside climate risks to debt sustainability. The lack of analysis of climate impact in the DSA therefore stands out like a sore thumb.

3.2 The Way Forward: Integrating SDGs 13–15 into DSAs

Currently, there are seven main criticisms of the way in which climate has so far been integrated into DSAs:

Country Coverage: The number of countries covered by the analysis is potentially far too low. In terms of the adaptation submodule, it is only the 25 per cent of countries which are considered most at risk (plus any applicants for the RSF) which have to be analyzed, whereas costs for adaptation are likely to be substantial for at least the top 50 per cent of countries (for example, 68 countries are members of the V20 group and around 80 are considered “climate vulnerable”). In terms of the mitigation submodule, the threshold set for using the module – countries which set a target of net zero by 2050 – is no longer ambitious as it has been adopted by 93 per cent of countries according to the UNFCCC. It would therefore make sense for the extended baseline scenario modules on adaptation and mitigation to be used for all countries to test whether climate spending constitutes a key risk for their debt sus-

tainability and/or could accelerate growth enough to increase debt-carrying capacity.

Underestimating Climate Spending Needs: Estimates of climate spending needed are far too low. As discussed above, country-specific costs for these aspects are 50 per cent higher for adaptation and 300 per cent higher for mitigation than those in the standard scenarios. The Staff Guidance Note acknowledges that its cost estimates for individual countries, which would generally be used for the customised scenario, include only two types of adaptation investments: strengthening physical assets and investing in coastal protection, i.e. protection against floods, storms and sea level rise. The mitigation costs presented for non-EU countries in the Staff Guidance Note also exclude investment in buildings, on the grounds that it is harder to distinguish which are normal building maintenance and which are climate mitigation investments. The Staff Guidance Note also fails to capture investments needed to protect against other important climate risks, including droughts and heat waves. Major investments for adaptation, mitigation and resilience are omitted from SRDSF baseline and customised scenarios.

In addition, to keep the baseline scenario agreed with the IMF for the first five years “clean”, the DSA adds the extra climate spending in only from year t+6 onwards, and therefore, in spite of the urgency of the climate crisis, does not provide any simulation of a potential additional scaling up of spending on the climate crisis before 2030.

The Staff Guidance Note on the SRDSF acknowledges that there will be major modeling and data advances in the calculation of country spending needs for adaptation and mitigation, and that therefore the Fund overall, and individual country missions, should keep assumptions under review. IMF staff interviewed and participants at the seminar in April 2024 acknowledged that there is therefore a need to review the assumptions made in the Guidance Note published in August 2022.

Ignoring the Positive Impact of Just Green Transition Spending: It is important to realise that all the reforms present additional spending on confronting the climate crisis negatively as “additional costs and risks” for financing needs and debt sustainability. In other words, they can only as currently constructed have a negative impact on the assessment of sustainability, by adding an additional high risk from high climate spending and related borrowing.²⁵ This could then be offset by assuming more concessional terms for financing such spending, in the customised scenario. There is no mention of major positive multiplier ef-

²³ Based on the countries defined as extreme or high vulnerability in Annex 1 of IMF (2016)

²⁴ For Bhutan, Cape Verde, Guyana, the Marshall Islands and Timor Leste. Djibouti's DSA is unpublished but is understood based on interviews also not to include any climate stress test.

²⁵ The Fund argues that it is implicitly taking into account the higher growth effects of climate spending, by assuming no deviation from the baseline growth path even though climate change will have negative effects on growth. However, a much more transparent solution would be to show the negative effects of climate change on growth in the baseline scenario, and the positive effects of anti-climate change investments in the extended baseline.

fects of spending on a just green transition on growth, jobs, or debt-carrying capacity, in spite of work by the Fund showing higher economic multipliers from such spending (IMF 2021a).

As discussed above, the IMF has simulated the impact of resilience spending on growth and on reducing the impact of natural disasters using the DIGNAD model, but it has not used DIGNAD to project the impact of broader climate adaptation or mitigation investments on growth. The IMF and World Bank have also both been working extensively on improving the efficiency of climate-related investments through climate spending-specific Public Investment Management Assessments and Public Expenditure Review analyses (see IMF 2024c and World Bank 2022) and broader efforts to improve “Green Public Financial Management”, which they suggest could improve investment outcomes by up to 20 per cent, but have not integrated these results into climate adaptation or mitigation spending scenarios.

Failing to Combine the Multiple Impacts and Spending Needs of Climate Change: Climate change analysts distinguish the different spending needs resulting from climate change as being for resilience (to protect against disasters), loss and damage (to rebuild the country after disasters), adaptation and mitigation. As currently constructed, the adaptation of the LIC-DSF to climate covers only the loss and damage impact on spending and other macroeconomic variables. The adaptation of the SRDSF covers adaptation and mitigation separately (and for different countries) in different long-term submodules, and loss and damage in a separate disaster stress test. Nowhere is there a combined overall climate impact scenario (for more on this, see Maldonado and Gallagher 2022).

Ignoring Other Environmental Goals: Other key environmental goals should be included in the DSFs in the same way as climate. Finance for Biodiversity (F4B) and the School of Oriental and African Studies (SOAS) (see Kraemer and Volz 2022) have recently analysed the scale of natural capital and biodiversity-related risks (SDGs 14 and 15) and, together with major global CSOs such as AVAAZ (2023), have argued they should be included in the debt sustainability analysis in the same way as been done with climate in the SRDSF. This is based on the facts that nature-collapse-related risks are increasingly being taken very seriously by others who are assessing risks to economic sustainability and that work by the World Bank (2021) and credit rating agencies has provided the tools for assessing the scale of these risks and their macroeconomic impact, and for integrating this relatively easily into DSFs.

SOAS has conducted such an exercise using the SRDSF tool and has shown in case studies of Bangladesh and Viet Nam that the impact of a nature collapse is greater than even the IMF’s combined worst case macroeconomic stress tests included in DSFs, and that there would

also be very severe negative effects on debt sustainability in Indonesia and Nigeria. As one example, a nature collapse shock would raise Bangladesh’s debt to GDP ratio by three times as much as did the COVID-19 pandemic. However, this work has not included any assessments of the public spending needed to prevent nature collapse, and the positive or negative impacts this could have on debt sustainability. There is little doubt that following the December 2022 Biodiversity Summit COP 15 and the 2023 Climate Change COP 28 in which it was agreed that climate and biodiversity are inextricably linked, and that countries should therefore include their nature spending needs in the NDCs for the UNFCCC, pressure to include this extra spending in the DSFs will grow in future years.

Failure to Link to Other IMF Targets and Processes: It should be noted that even if climate and nature goals are included in the DSA projections they are a long way from becoming top priority spending as classified by other IMF tools. It will also be vital to protect the spending analysed in this scenario from any broader budget cuts, by including it in the “indicative spending floors” which are fixed in IMF programmes but currently limited to a subset of social spending (for a recent analysis of these floors, see Oxfam 2023). As a result, their title should be changed to “indicative social and environmental spending floors.”

Equally, the IMF could consider linking its own lending and other facilities (such as the Catastrophe Containment and Relief Trust, CCRT) to a more vulnerability-rather than income-led classification of countries, which would allow countries highly vulnerable to climate change (and other environmental or natural disaster) shocks to access CCRT debt-service cancellation and concessional lending provided by the RST, regardless of their income level. Alternatively, the IMF could provide other debt-relief modalities such as disaster debt service suspension clauses to countries of all income levels (see also Gallagher et al 2023).

Not Giving Sufficient Emphasis to Climate Scenario Results in Summary Presentations of DSA Results: Looking across the range of DSAs for which climate modules have been used, there are many where the (usually very significant) implications of climate are not mentioned in the summary presentation of the DSA results and of how the decision on risk rating has been taken. This seems partly to reflect the separation of the impacts of adaptation and mitigation, again making the case for why the results of the two modules should be combined in presentation. One example is the 2023 DSA for Trinidad and Tobago (IMF 2023b), in which the combined adaptation and mitigation modules lead to an increase of 30 percentage points in the debt/GDP ratio, but all the emphasis in the summary is placed on the potential impact of failure to reform the pension system for an ageing population.

4. Adapting DSAs to Combat the Extreme Inequality Crisis

4.1 Definition and Background/History of Past Efforts

As discussed, many experts see the extreme inequality crisis²⁶ in many countries in the world as having major negative effects on economic growth, political stability, insecurity and crime, progress on education and health indicators, and many other key aspects of development – which are just as significant as those being produced by the climate crisis. In addition, analysts of the climate crisis including the IPCC have emphasised that the climate crisis cannot be successfully tackled without also sharply reducing inequality and poverty through a “just” green transition.

Nevertheless, in contrast to efforts on climate, this is an area in which the IMF and World Bank have made no adaptations to their methodology, in either the SRDSF or the LIC-DSF. Indeed, the only mention of the “social sector SDGs” in the DSFs is the inclusion of a module in the SRDSF, tracking the potential negative demographic risks for debt sustainability (in countries with a growing proportion of elderly citizens) of growing costs for social security, pensions and public healthcare (see IMF 2022b).

4.2 The Way Forward: Integrating SDG10 into DSAs

In spite of the lack of progress so far, it is easy to see how spending which would have a key impact on reducing extreme inequality and poverty could be factored into debt sustainability analysis.

As with climate, this could be done through a module in the SRDSF (and preferably a similar module introduced as part of the review of the LIC-DSF, as discussed in 3.2.2. above for climate). This module could track the increases in the key types of spending needed to reduce inequality and their impact on debt sustainability. These types of spending have been shown in multiple studies to be education, health and social protection; additional sectors with strong impacts are water and sanitation, public housing, public transport, access to electricity and small-scale infrastructure such as rural roads and markets.

It is suggested that the core sub-module of this module would include the sectors where the type of spending has the most significant impact on inequality across all countries: this could apply only to education, health and social protection; or be expanded to cover the other sectors the IMF included in its previous analysis of SDG costs – electricity, water and sanitation, and rural roads. The additional sectors (especially public housing and public transport) could be put in a second sub-module, mainly because reliable

estimates of their costs across multiple countries are available only for OECD and some MAC countries, and used only when the spending levels in these sectors reach a trigger threshold as a percentage of total government expenditure. This would resemble the use of the adaptation and mitigation sub-modules for climate currently contained in the SRDSF, which are applied to different countries based on particular triggers.

As with the SRDSF climate module, such a module could provide projections over a 30-year horizon under two scenarios: an “extended standardised baseline” scenario based on default costs in a template, and a customised scenario, where users can adjust the costs to country-specific characteristics. The customised scenario would also allow users to adjust the financing terms of the inequality-related investments, providing scope to show the difference between financing with concessional debt, tax, or grants.

It would also allow users to adjust the long-term GDP growth path – thereby in principle providing space to incorporate the results of the positive growth impact of any anti-inequality spending. The IMF’s own work (IMF 2017) has shown the very substantial impact reducing inequality could have on accelerating growth by up to 5 per cent a year in the countries with highest inequality: it would accelerate per capita real GDP growth by between 0.15 per cent and 0.4 per cent (the highest numbers applying to the most unequal countries) for every percentage point by which the Gini coefficient is reduced. Therefore, it will be vital that this accelerated growth rate be included in the module, to provide a realistic assessment of the positive as well as negative impact of anti-inequality spending on debt sustainability.

As mentioned in Section 2, there exist clear costings methodologies for each sector, most of which (for education, health, electricity, water and sanitation, and rural roads) have been agreed by the IMF and applied across eight countries. These reflect the “currently best estimates” (to use the phrase applied in the SRDSF climate module) by the IMF for individual country costs for spending on these sectors which will be sufficient to reach the SDGs for different regions or types of countries. It would also be highly desirable to add in costs for social protection, given that widely accepted methodologies exist, courtesy of the International Labour Organization (ILO) (ILO 2024), and taking into account the crucial role social protection played in protecting overall progress on all SDGs during the COVID-19 pandemic. To facilitate the task of integrating anti-inequality spending into the DSF, the module could again be “pre-populated” with estimates of total likely spending as a proportion of GDP for different country income level groups, making it easy to use while giving the user plenty of flexibility to change the default assumptions.

²⁶ Some interviewees have indicated that the suggestions in this section might be more palatable if they were phrased as adapting DSAs so as to ensure the end of extreme poverty (SDG1), given that the key sectors in which spending would be needed would be broadly similar. However, the World Bank has stated clearly that it will be impossible to end extreme poverty without dramatic reductions in inequality, so the focus is on SDG10.

Several experts interviewed for this paper have suggested that, given the close links between the climate and inequality crises, and the need to tackle both urgently in virtually all countries, all countries borrowing PRGF or RSF should be analysed using both the climate and inequality modules. However, if this is initially too ambitious, it would be relatively easy to define which countries should be analysed using the module:

- For countries which request financing from the Poverty Reduction and Growth Facility (PRGF) of the IMF, the first submodule would have to be analysed.
- Use of one or both of the submodules would also be compulsory in predefined groups of countries in which the fiscal costs and risks of reducing inequality are expected to be significant.
- The first submodule could be compulsory in, for example, the top 25 per cent of countries with the highest inequality levels, as measured by their Gini coefficients after current tax and transfer measures. A simple threshold for such an analysis could be set at a Gini of 0.4, which would cover around 57 countries, and would match the levels considered to be “high inequality” by the UN and the World Bank.²⁷ More complex methods of setting such a threshold, using other inequality and poverty indicators, could also be devised.
- The submodule could also be used in all countries which have less high inequality (for example a Gini of between 0.35 and 0.4) but where the country’s government has set itself a clear goal to reduce inequality and growing inequality has been identified as a problem by the World Bank and/or IMF (this would cover countries such as Ethiopia, Kenya, Mongolia, Senegal, Sierra Leone and Viet Nam).
- The second submodule could be used in countries where the country’s government has set itself a clear goal to reduce inequality, and where data on costs of spending on the broader sectors are available (which from DFI’s experience are generally OECD Member countries and some middle-income countries in Asia and Latin America).
- Use of the main submodule could also be compulsory in debt-restructuring cases, to provide guidance to teams who need to formulate realistic debt restructuring envelopes, on the same grounds as the use of the climate adaptation submodule in the current SRDSF.

For the remaining IMF member states, use of either module could remain optional, based on the views of the au-

thorities and the IMF mission as to the likelihood of a high inequality risk. On the other hand, if the process of including estimates of spending needed to reach the core SDGs is relatively straightforward, it would make sense for the extended baseline scenario module on inequality to be used for all countries, in order to test whether anti-inequality spending constitutes a key risk for their debt sustainability and/or could accelerate growth enough to increase debt carrying capacity.²⁸

As with the climate module, based on the IMF’s own estimates in its existing studies, the fiscal costs of reducing inequality by reaching universal education, health care and social protection could be sizeable for many developing countries. If costs are high when the core submodule is run, then this would be supplemented with a second step, with the building of a customised country-specific scenario which looks at how these costs can be funded while maintaining debt sustainability.

As with the adaptation submodule of the SRDSF, missions would then be encouraged to look for other sources as estimates of costs: virtually every country has available costings for education, health and social protection as part of its national and sectoral development plans (which would need to be updated for the delays caused by the pandemic and the recent widespread high inflation), or the IMF could in cooperation with the country authorities conduct the same calculations using globally-agreed costing methodologies as it did for the country SDG case studies since 2019.

This more customised scenario could also include the impact on growth of spending to promote resilience against health pandemics, as well as extra costs of health prevention/treatment and social protection during pandemics), though this would require a further adaptation of the IMF’s DIGNAD model, in consultation with global pandemic experts.

In addition, the customised scenario would also allow analysis of an alternative financing path which would allow debts to stay sustainable while funding the key anti-inequality and anti-poverty spending needs. This once again is a relatively straightforward task, involving making additional assumptions about increasing especially non-debt creating sources of financing such as tax revenues (which should be provide higher funding in a country with higher per capita GDP as a result of acting against inequality), ODA and other concessional flows, lower external and domestic borrowing costs, and debt relief where needed. These were the types of scenarios DFI helped countries to simulate under the HIPC CBP, and it has recently repeated this exercise for 40 Sub-Saharan countries in a post-COVID context for UNAIDS.

²⁷ For the definition of these levels and the countries which would be covered by them, see Martin and Kripke 2023, used as a submission into the review of the UN progress on SDG10. These are also the levels which were suggested as representing “high inequality” which could be judged as “macro-critical” by Fund staff interviewed as part of the process of compiling the paper.

²⁸ See section 3.2.1) above for similar argumentation around the climate module.

These proposals would be implemented in both the SRDSF and the LIC-DSF. In addition, both could include separate ways of dealing with “shocks”. As with the current SRDSF and LIC-DSF “natural disaster stress tests”, the IMF and World Bank could use a “pandemic stress test”, judging the impact of a renewed pandemic on economic prospects. The case for including such a stress test should not need to be argued, given the massive actual negative impact COVID-19 had on economic growth, budget revenue, exports and additional borrowing by countries during 2020–2021, resulting in a major deterioration of debt sustainability assessments among MACs and LICs – and the assessment by the Independent Panel for Pandemic Preparedness and Response that we should take the pandemic threat as seriously as climate change.²⁹

Given that the COVID-19 pandemic had a major impact on every country, it would be sensible to include this stress test for all countries rather than limiting it to a subgroup based on where the impact on GDP/ budget revenue/ exports was greatest. Based on the latest expert assessments of the potential frequency of pandemics, the stress test could involve simulating a shock comparable to COVID-19 occurring once in each decade. DFI has recently been including the GDP and revenue impact of COVID-19 as a “stress test” in analysis of social sector (especially HIV response) financing prospects conducted for UNAIDS and covering Sub-Saharan African countries, and has found this relatively straightforward (Hurley and Martin 2024).

As emphasised in section 3.2, it would be preferable for all of the inequality and pandemic spending costs and financing reactions (including what are now seen as predictable regular pandemic shocks) to be included in one scenario, rather than separating them, but it may be that for technical or messaging reasons they need to be kept separate.

5. Overall Conclusions and Recommendations

This paper has examined how the Debt Sustainability Analyses conducted by the IMF and World Bank could be adapted to take more account of the Sustainable Development Goals and Agenda 2030.

It has looked first at the case for making such adaptations, made even more urgent by the need to help IMF and World Bank member states to prioritise national spending (and ensure that its financing does not compromise debt sustainability) in the post-COVID context of polycrises and limited global concessional funds. In particular, the paper emphasises the vulnerability of all countries across the world to two urgent crises: the climate emergency (and related risk of nature collapse and natural disasters); and extreme inequality and poverty, which have been worsened by COVID-19 and are undermining growth and stability.

The paper next looked at existing efforts to include the SDGs in debt sustainability analysis. It found that this had been done successfully by many countries during the period of the Millennium Development Goals, in countries such as Bolivia, Burkina Faso, Rwanda and Tanzania, and that there already exist many building blocks which would make such inclusion possible (notably agreed estimated global costings and methodologies for country-specific costings for all of the SDGs). Nevertheless, it underlined that in the current “polycrisis” period, with only seven years to go to reach the SDGs, integrating the spending needed to reach all of the SDGs into the DSFs would simply produce a conclusion that virtually all countries would have unsustainable debt levels. As a result, it will be essential for countries to prioritise which SDGs they wish to include. The paper identifies the two greatest threats to debt sustainability (but also the greatest potential opportunities for growth and greater debt-carrying capacity if we combat them successfully) as being the dual crises of climate and nature emergency, and extreme inequality and poverty. It therefore recommends that the international community should focus on prioritising the adaptation of the DSFs to these issues, while ensuring that countries have flexibility to prioritise particular sectors within these areas.

The paper next examined progress so far in adapting the SRDSF to forecasting long-term scenarios related to climate change adaptation and mitigation, as well as including natural disaster “stress tests” in its methodology to examine the impact of natural disasters in both the SRDSF and the LIC-DSF. Overall, these are major steps forward to including SDG13 in the DSA methodology, which provide a clear framework for how similar work could be done on other SDGs. However, the paper raises criticisms and suggests ways to improve this work in terms of broadening country coverage; calculating spending needs more accurately and (given the urgency of climate crisis action) including them in forecasts from year one of the projection; including the potential positive impact of just green transition spending; combining the multiple impacts of climate into one scenario; including the other environmental goals to prevent nature collapse; linking up the implications of climate-adapted DSFs to other IMF processes such as indicative spending floors and country lending eligibility; and giving more weight to climate module results in overall DSA risk assessments.

Finally, the paper examined the lack of progress on adapting DSFs to the key types of spending which will confront the extreme inequality and poverty crisis. Currently the only mention of these types of spending is in an SRDSF module examining negative risks of ageing populations for higher health and social protection spending. However, the paper finds that it would be very easy to replicate what has been done in regard to integrating climate spending, for key anti-inequality spending. In particular, it finds that it would be easy to define the types of spending to include in an addi-

²⁹ For more details on this panel and its conclusions, see <https://theindependentpanel.org/>

Type of Adaptation	Current Situation	Reform Proposals
Climate / Environment	SRDSF: Adaptation and Mitigation Costs in “Extended Baseline” SRDSF and LIC-DSF: Natural Disaster Shock in “Stress Tests”	→ Replicate SRDSF Climate Module in LIC-DSF Review → Include Nature Collapse Risk and Prevention Spend → Combine all Climate Impacts → Include Positive Impact of Spending on Growth → Customised Scenario with Country Costs and Sustainable Financing → Give More Weight to Climate Module Results in Overall Risk
Inequality / Poverty	No Current Adaptation	Both SRDSF and LIC-DSF: → Anti-Inequality / Poverty Module – “Extended Baseline” → Trigger High Net Gini (e.g. 0.4) → Include Positive Impacts of Spending on Growth → Customised Scenario with Country Costs and Sustainable Finance → Pandemic Shock Stress Test → Preferably Combine All Inequality / Pandemic Impacts

tional module or sub-modules, using an extended standard baseline scenario, and to define the country groups in which this should be done. It also finds that accepted estimated costs exist for the key sectors to be included, with which a template could be “pre-populated”. It would also be easy where necessary (i.e. where costs are very high) to include customised country-specific scenarios analysing costs and potential sustainable financing sources in more detail (for which clear and simple methodologies exist); and it would be feasible - and essential - to include the major positive impacts on growth which reducing inequality would have. Given that studies suggest a global pandemic is likely once every decade, it also suggests that a pandemic “stress test” should be included in both SRDSF and LIC-DSF.

However, it is also vital not to forget two broader suggestions which are made in the paper:

- There is no reason why the twin crises of climate and inequality should be considered separately. Ideally, climate and inequality would be considered and tackled together in all relevant countries so as to promote a “just green transition” across all countries and maximise the positive multiplier effects of the combined spending. This would mean that DSF modules on climate and inequality would be used simultaneously and their combined effects on sustainability, financing needs and growth shown.³⁰

- In the same way, other tools used by the IMF and World Bank could be made more consistent with the debt sustainability assessments: this applies notably to indicative spending floors in IMF programmes, where the definition of protected priority spending still revolves around social spending and should be expanded to include climate adaptation or mitigation or any efforts related to nature.

Of all the suggestions made in this paper, the most important are to include in the scenarios the immediate and longer-term positive impacts and multiplier effects of spending on climate, nature and anti-inequality sectors on growth; and the impacts of increasing sources of finance which create no or highly concessional additional debt (tax revenue, grants, concessional loans and debt relief). It will also be highly important that baseline scenarios are made even more realistic than they are currently, taking into account the major negative effects on growth of growing climate and pandemic disaster events, as well as the permanent effects of more gradual climate impacts such as desertification/drought, sea warming, and those of inequality, on undermining growth (rather than, as currently, not mentioning them).

These aspects cannot be seen as things which are “beyond the scope of a DSA” and therefore left to separate initiatives; nor can it be assumed that they are included in budgets or macroeconomic frameworks. The levels of spending in those

³⁰ Some interviewees suggested that to ensure that this happens naturally, the RSF and the PRGF could be merged: however, the different beneficiary countries, funding sources and purposes of the facilities might prevent this.

documents almost always fall way short of the SDGs, and of ambitions governments have expressed in national development plans or election campaigns, thereby enhancing the growing cynicism of citizens across the world about politicians and democracy.

They are vital in order to ensure that a revised DSA framework does not simply become a source of evidence reinforcing the view that climate and anti-inequality spending on the scale needed to reach the SDGs will dramatically worsen debt sustainability and increase debt risks: this is a major risk if the only impact of reforms is to add in large additional spending costs, and is likely to help prevent countries from reaching any of the SDGs or overcoming climate, nature, or inequality crises. Instead, the clear message emerging from revised DSAs with climate and inequality modules should be similar to that proven successfully during 2010–2015 with the Millennium Development Goals, that low- or no-cost financing plus major multiplier effects can allow us to reach the top priority SDGs and confront the climate, nature and inequality crises without provoking a widespread debt crisis. Their aim should be to assist countries in arguing the case for mobilising more concessional financing or debt relief and accelerating their efforts to collect progressive tax revenue.

However, there is no getting away from the likely initial impact of including large extra amounts of spending (before positive multipliers, extra tax revenue and concessional flows kick in), which will be to increase debt ratios. To ensure that the SDGs are not sacrificed to keep debt levels sustainable, it will be essential to keep country debt burdens as low as possible and avoid what has happened over the last decade – a rapid rise in debt-service ratios so that SDG and climate spending is massively crowded out by debt service. To make this possible, and to accelerate the provision of debt relief where needed, much more emphasis must be placed in interpreting debt sustainability on the liquidity burden of debt service – and with just as much emphasis on external as domestic debt service – than has been in previous iterations of the DSF. This could be done by making debt service/budget revenue the primary risk indicator in interpreting DSA results. An even better way to sharpen the focus on this issue would be to add to the DSA framework an indicator showing the ratio of debt service to climate and/or anti-inequality spending (for which data exist, as Debt Service Watch shows), to measure the risk that high service is crowding out key SDG spending.

The case for (and feasibility of) adapting the SRDSF and LIC-DSF more fully to country SDG needs and spending priorities is clear. It can build on the reforms already made to the SRDSF, and the suggestions made in this paper. The forthcoming review of the LIC-DSF (and updating of implementation guidelines for the SRDSF) should take a strong lead in this area, fundamentally reforming the LIC-DSF and the SRDSF, and thereby enhancing the contribution of the IMF and World Bank to Agenda 2030 and attaining the SDGs.

About the author

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Debt Justice UK
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European Network on Debt and Development (EURODAD)
International Monetary Fund (IMF)
Latin American Network on Debt and Development (LATINDADD)
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United Nations Conference on Trade and Development (UNCTAD)
World Bank

Chapter 3

How Transparency Makes Debt Sustainability Analyses a Trusted and Effective Tool

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Summary

This paper analyses the extent to which the Debt Sustainability Analyses (DSAs) carried out by the International Monetary Fund (IMF) and World Bank are sufficiently transparent, and what measures have been taken to improve their transparency. It identifies three key pillars of transparency: (i) public disclosure; (ii) openness in the data, methodology and assumptions used; and (iii) processes for engagement and looks at how well DSAs measure up against them. Overall, it finds that while recent steps have been taken to improve key foundational aspects of transparency, particularly those related to public disclosure, more qualitative aspects of transparency, such as access to key data and understanding how key assumptions have been derived, are still lacking. There are also differences in public disclosure regimes for low-income countries versus market-access countries that can be challenged. Access to information in times of debt distress is also more limited. Improved transparency in DSAs is vital for driving continuous improvement, fostering trust and confidence, and enabling the formulation of better policy advice. The paper outlines a number of ways in which transparency can be strengthened in DSAs. It also emphasises that this must be part of a wider effort to strengthen transparency and accountability across the whole borrowing cycle, and that concerns around impartiality and potential bias in DSAs are ultimately only likely to be resolved when DSAs are conducted by an independent entity.

1. Introduction

Transparency in the Debt Sustainability Assessments (DSAs) carried out by the IMF and the World Bank is a longstanding issue. While there have been several efforts over the years to review and reform the debt sustainability frameworks, including measures to increase transparency, civil society has recently described the framework for market access countries as a continued ‘black box’ (Bretton Woods Project 2021). Why is transparency in DSAs important, however? Important to whom? What steps have already been taken to improve transparency? What more needs to be done? And how can transparency help to make DSAs a trusted and more effective tool? This is the subject of this paper, which looks at both the debt sustainability framework for market access countries (MACs) implemented by the IMF (now known as the Sovereign Risk and Debt Sustainability Framework – MAC SRDSF), and the debt sustainability framework for low-income countries (LIC DSF), implemented jointly by the IMF and the World Bank.

DSAs matter. The assessments, which are performed through standardised templates, are used to determine vulnerability to debt distress and are meant to alert sovereign states to potential debt stress. Many official-sector lenders, including multilateral development banks (MDBs) and bilateral lenders, use them to determine access to concessional finance, and they are also used to inform negotiations on sovereign debt restructurings.

They are also particularly relevant in the current context. The recent period has seen large and rapid increases in both public debt and debt vulnerabilities. Overlapping shocks and crises, including the recent COVID-19 pandemic, the spillover effects of the war in Ukraine on food, fuel and fertiliser prices, conflicts, and increased climate change risks have combined to undermine economic growth, squeeze public revenues and increase poverty and inequality. They have led to higher borrowing needs for all countries, but particularly countries of the Global South. In 2021, 60 developing countries registered public debt levels higher than 60 per cent of GDP – up massively from 24 per cent just ten years earlier (UNCTAD 2023). Eleven low-income countries are currently classified by the IMF and World Bank as ‘in debt distress’ while a further 51 are classified as at ‘moderate’ or ‘high’ risk (IMF List of LIC DSAs for PRGT-Eligible Countries). Developed countries’ failure to adequately scale-up concessional finance for sustainable development and climate action is another factor which has contributed to high public debt burdens.

The world has now passed the midpoint for achieving the UN 2030 Agenda for Sustainable Development. Yet over the last two years the UN reports that ‘no progress’ has been made towards the Sustainable Development Goals (SDGs) and that the 2030 Agenda for Sustainable Development is ‘a promise in peril’ (UN 2023). There is widespread recognition that the SDGs face an uphill struggle – they will not be met without large and unprecedented increases in public investment in a context in which increased turbulence and instability are the new norm, and where large increases in donor-provided concessional funds are unlikely (NBER).

Against this backdrop, DSAs can clearly play a key role in supporting borrowers and lenders in responsibly navigating this increased uncertainty. And where debt difficulties do arise, they can advise on what is required to restore sustainability. To enable them to perform these functions, however, it is vital that DSAs are a robust and trusted tool. Transparency is one way to help ensure that DSAs are ‘fit for purpose’.

2. Transparency in DSAs: What are the issues?

2.1 Transparency issues can be grouped into three broad categories

1. Public disclosure and accessibility: the extent to which DSAs are publicly available, are published in a timely manner, and are presented in a format such that interested parties (both expert and non-expert) are able to understand and utilise DSAs effectively.
2. Methodological: the extent to which there is transparency and clarity in the methodologies, assumptions and data being used to arrive at an overall assessment of the risks of debt distress, and that this assessment is impartial.

3. Dialogue and engagement: the extent to which clear and transparent processes are in place which provide a means for external actors to engage meaningfully in DSAs, and also foster trust and inform change.

All three elements are needed to ensure ‘effective transparency’, which is understood to be a situation in which key constituents for DSAs, who include parliamentarians, civil society organisations (CSOs), borrowers, lenders, development partners, credit ratings agencies, academic researchers and the media, are empowered with the information, tools and processes they need to understand a country’s debt situation and to drive change.

2.2 Transparency in DSAs is expected to achieve

Better accountability: Transparency in DSAs can enable better scrutiny and oversight in debt management. It can help to reduce the potential for mismanagement, corruption or politically biased decisions, and ensure that debt supports national development priorities and productive and efficient public investment. It also helps to ensure the accountability of the IMF and the World Bank as the institutions which are leading on the DSAs.

Informed decision-making: Transparency allows diverse stakeholders to understand the public debt burden and its associated risks. DSAs provide key information to borrowers, lenders, legislators and other stakeholders, who need this information to make informed decisions about borrowing, lending and appropriate fiscal policies. Transparency can help increase confidence in DSAs, which in turn can enhance their role as an important preventative tool and a key tool to assist in debt-restructuring negotiations.

Strengthened international coordination and policy responses to debt: Transparency can help foster confidence in the debt sustainability frameworks as a robust and trusted international tool. This can promote dialogue and engagement amongst international financial institutions, sovereign states and other stakeholders, and enable a more coordinated and coherent approach on the most appropriate policy responses.

Learning and improvement: Through sharing methodologies, assumptions, data and other information, the Bank and Fund can receive valuable feedback on how DSAs can be refined, leading to improvements in analytical frameworks, more accurate DSAs and better policy advice. Access to information (and to IMF and World Bank staff members who prepare DSAs) also builds the capacities of external stakeholders like parliamentarians, civil society and the media to become engaged, which enables them

to be more knowledgeable and effective advocates. Transparency can also be beneficial where there may be differences of opinion on the debt vulnerabilities of a particular country.

How do DSAs currently measure up next to these three critical dimensions of transparency?

3. Transparency in DSAs: the current picture

3.1 DSAs: Public disclosure and accessibility

Public disclosure is the first critical layer of transparency. Are DSAs available in the public domain? There is undoubtedly more awareness today about the importance of transparency and public disclosure within the IMF and the World Bank.³¹ The 2017 LIC DSF review process, after which the availability of information has improved considerably, has been described as particularly important.³² In its 2017 review of the LIC DSF, the World Bank reported at the time that ‘The reforms [will] adapt the framework to make it simpler and easier to use, more comprehensive and transparent’ (World Bank 2017).

DSAs for most low-income countries are now routinely published and are relatively easy to locate. The Bank and the IMF also have dedicated DSA sections on their websites (IMF 2023, World Bank Debt and Fiscal Rules Toolkit, Debt Sustainability Analyses). On the World Bank’s website, there is a consolidated list of the most recent DSAs for low-income countries which covers 67 countries (World Bank Debt Toolkit). In the few country cases where the full DSA is not available, the Bank and IMF report that this is because the relevant country authority has not authorised publication (World Bank Debt and Fiscal Rules Toolkit, Debt Sustainability Analyses).³³ Publication requirements for LIC DSAs include the staff’s overall debt risk assessment, including whether judgement has been applied, and the underlying data on which the DSA is formulated. The 2017 LIC DSF review has also acknowledged the need to build knowledge and accessibility of the framework for country officials and other external stakeholders. Guidance Notes, videos, an online training course, periodic workshops and consultations are also all now available (IMF Debt Sustainability Framework for Low Income Countries online course).

DSAs for market access countries are, however, subject to different public disclosure requirements, and several important restrictions on public disclosure are in place. Key information which is deleted prior to publication include the country’s near-term debt sustainability assessment, its final debt risk assessment, and summary assessment, in-

31 Perspective shared in stakeholder interviews. See annexe for full list of interviews (institutional affiliation only).

32 Perspective shared in stakeholder interviews.

33 These countries are: Bangladesh, the Democratic Republic of the Congo (DRC), Mozambique and Timor-Leste.

cluding the use of judgement. Key references as to the ‘probability of sustainable debt’ have also been removed (IMF 2022). As with the LIC DSF, key technical materials are available to explain the frameworks more fully, including Guidance Notes and a public Excel tool. However, the public Excel tool presents only a theoretical example of a MAC SRDSA and the underlying data sets are not publicly disclosed (IMF Debt Sustainability Analyses for Market-Access Countries). Unlike LIC DSAs, MAC SRDSAs are not easily ‘searchable’ and are not located in one centralised place online; the IMF’s website on the SRDSF also does not signpost where interested parties might find them (IMF Sovereign Risk and Debt Sustainability Analysis for Market-Access Countries).

In 2022, enhanced disclosure of market access DSAs was put to the IMF Board as part of the 2021 MAC SRDSF review. However, the Executive Board decided to maintain these restrictions on public disclosure for at least twelve months following rollout of the new updated framework. It is valid to ask, however, whether a case can be made for these differences in public disclosure.

Typically, the main reason given for these different public disclosure regimes is ‘market sensitivity’ and the concern that transparency could negatively affect a country’s access to markets. However, market-access countries are subject to a suite of disclosure requirements when they wish to issue debt on international markets, and these countries’ debt risks are pretty much well-known (and are followed closely) by markets. Moreover, if DSAs are frequently over-optimistic in their assessments, as alleged by many civil society organisations and researchers (explored in more detail in the next subsection), then this would in fact send a positive signal to markets and could be seen to benefit a borrower country. Other reasons also favour enhanced disclosure. For example, a key concern of some developing country governments today is that credit ratings agencies are in some cases ‘misrating’ their risk, leading to higher borrowing costs.³⁴ Fully public DSAs could in this context provide credit ratings agencies with a useful ‘second view’ to inform their own models, judgement, and risk ratings. The publication of both the DSAs and rating agencies’ models and approaches could then, in turn, enable external stakeholders to compare different sets of analysis, increasing trust and confidence and reducing opportunities for potential bias (either by the Bretton Woods Institutions or the credit ratings agencies).

In addition to this, it is important to note that the distinction between market-access and low-income countries is

extremely artificial and increasingly questionable in light of many low-income countries’ increasingly complex creditor profiles, including recent borrowing on international markets. For some external stakeholders, the failure to apply a uniform approach across countries also leaves a false impression that poorer countries must be more closely financially surveilled because they cannot make excellent decisions.³⁵

Another observation is that while efforts have been made to strengthen the availability of technical-level resources and to build the capacity of more technical-oriented audiences with regard to the frameworks, it does not necessarily follow that DSAs are then being picked up by a wider set of stakeholders. DSAs are without question most important – and consequential – at the country level. Yet, many civil society organisations suggest that the documents are not well-used at a national level, particularly by key stakeholders like parliamentarians. This is because they are poorly understood.³⁶

Perhaps by their very nature, DSAs are not especially accessible to non-specialist audiences. However, even CSOs and researchers experienced in international debt policy and analysis report that they still struggle to ‘untangle’ DSAs.³⁷ The documents have been described as ‘extremely dense’, ‘heavy’ and ‘difficult to digest’. It is easy to see how the reader could quickly become overwhelmed by the volume and complexity of the data, the various fan charts and the other considerations which make up a DSA. Their limited availability in local languages further hinders accessibility to national-level stakeholders. Translations, where they do exist, are less visible and easy to locate and are not published alongside the English-language versions or signposted within the two institutions’ websites.

It has been suggested that the format and language in which DSAs are published caters more to stakeholders like lenders than to domestic stakeholders, including legislators, civil society or the media.³⁸ The drive to incorporate the huge variety of shocks that could possibly impact a country and its public debt dynamics – from natural disaster shocks to commodity price shocks, to bailing out state-owned enterprises, and more, means that the simplicity and transparency of assessments have been lost. Beyond the short up-front summaries, it is fair to suggest that DSAs remain largely inaccessible to non-specialist stakeholders, and more attention could be paid to strengthening their accessibility to key domestic stakeholders in particular.

³⁴ Perspective shared at expert roundtable discussion, September 2023.

³⁵ Perspective shared in stakeholder interviews. See also: Development Reimagined, Policy Brief, How can the IMF, World Bank and other global financing mechanisms be reimagined to work better for Africa? 2022: <https://developmentreimagined.com/imf-and-world-bank-annual-meetings-policy-brief-reimagining-the-international-finance-system-for-africa/>

³⁶ Perspective shared in stakeholder interviews.

³⁷ Perspective shared in stakeholder interviews.

³⁸ Perspective shared in stakeholder interviews.

3.2 Transparency in data, methodology and assumptions

For those able to understand and digest DSAs in more depth, transparency in the data, methodology and key assumptions being used to formulate them is crucial. The key question is whether the tools and information currently available are sufficient to enable researchers, civil society actors and other stakeholders to recreate DSAs for themselves and challenge the approach and results where appropriate.

Data disclosure has improved but remains more comprehensive in the LIC DSF than the MAC SRDSF. The underlying data sets used to formulate MAC SRDSAs are not publicly available (though they can sometimes be accessed on request from the IMF).³⁹ This stands in contrast to the LIC DSF, where the completed Excel templates are available online and external stakeholders can in principle explore the various data inputs, assumptions and scenarios in detail (World Bank Debt and Fiscal Risks Toolkit, Debt Sustainability Framework).

Beyond simple data disclosure however, researchers also want to understand more qualitative aspects of the approach. For example, how debt sustainability thresholds and targets have been derived for individual market access countries. In contrast to the LIC DSF, which sets standardised debt sustainability thresholds for countries, debt sustainability thresholds can be set at very different levels under the MAC SRDSF. For example, Suriname's debt sustainability target is to reduce public debt to 60 per cent of GDP by 2035, whereas for Sri Lanka it is to reduce debt to 95 per cent of GDP by 2032 (IMF Suriname 2023, IMF Sri Lanka 2021). Yet how these thresholds were reached is not transparent or explained.

Another key transparency issue concerns data quality. By definition, a DSA is only as accurate and robust as the data which informs it. This means that the credibility of DSAs depends not only on the availability (coverage) of data but the quality of that data, including whether the data are timely, accurate and include all debt-producing liabilities. With the most recent review processes, the IMF and the World Bank took steps to strengthen disclosure requirements related to contingent liabilities and to build in a contingent liabilities stress test, including full disclosure of the assumptions being used about what those contingent liabilities might be. However, the overall quality of the data which informs DSAs is not known and DSF Guidance Notes do not explicitly require an assessment in the DSA of data quality (Hettinger and Chelsky 2023). Additionally, DSAs do not signal the degree of confidence that IMF and World Bank staff have in the data on which their analysis is

based. This is problematic, since many low-income countries, in particular, do not meet minimum standards of public debt recording and reporting, and there are often significant discrepancies in the data reported to different systems and publications.

For example, the World Bank reports that one in five IDA-eligible countries does not report data which is comprehensive or of satisfactory quality to the World Bank's Debt Reporting System (DRS) on which DSAs are based (World Bank IEG 2023). Even where debt data has been routinely reported, the Bank reports that it can be challenging to interpret it and assess its quality, leading in turn to multiple (often upward) revisions to the debt data. Over the last five years that Bank reports that upward revisions occurred in more than 60 per cent of countries which reported debt data to the DRS (World Bank IEG 2023). Data quality problems are particularly acute in fragile and conflict-affected states but are also present in market access countries. Data quality concerns have recently been flagged by the World Bank's Independent Evaluation Group (IEG) which proposes that there should be more transparency around data quality issues and the final reports should explicitly include an assessment of data quality (World Bank IEG 2023).

Concerns around data quality illustrate just one of the many reasons why judgement might be called for in a DSA. Acknowledging the myriad complexities that are involved in a DSA, both frameworks allow for the use of judgement to arrive at a final debt risk rating. According to the Bank and Fund, this can allow for a more 'nuanced and flexible approach', allowing the DSF user to take into account specific country circumstances that might not be fully captured by purely quantitative metrics, such as a crisis situation, or when countries face other exceptional circumstances. Users are advised to 'combine the signals from the model on the risk of debt distress with judgment based on knowledge of the country analysed to arrive at a final assessment' (IMF-World Bank 2017). Since 2017, LIC DSAs have carried a short table up-front which states, in brief, whether judgement has been applied and the issues this judgement took into account.

From a transparency point of view, however, this flexibility also introduces the possibility that judgement will be inconsistently applied. Analysis of the most recent LIC DSAs finds that judgement has been used fairly frequently in LIC DSAs – though not in a majority of cases (World Bank Debt and Fiscal Risks Toolkit⁴⁰). In the 65 most recent LIC DSAs, judgement has been used in 14 countries in total, while in 51 it has not.⁴¹ In ten cases, judgement led the country to be 'downgraded', i.e. assessed at higher risk

³⁹ Perspective shared in stakeholder interviews.

⁴⁰ This covers 65 countries where the final reports are publicly available and covers DSAs carried out between 2019 and 2023.

⁴¹ Author's research based on data published by the IMF and World Bank. The countries where judgement had been used are: Afghanistan, Bhutan, Burkina Faso, Cambodia, Haiti, Kyrgyz Republic, Mali, Federated States of Micronesia, Nepal, Rwanda, Samoa, Timor-Leste, Togo and Tuvalu. The author's research updates the most recent analysis on the use of judgement published by the Independent Evaluation Group (IEG) in April 2023.

Public disclosure in times of crisis

Transparency and the public disclosure of information in times of debt distress and when negotiations are ongoing around a potential debt restructuring constitute a more complex and contentious issue. For many civil society organisations, access to information and the DSA are critical at this time, since the negotiations – and their outcome – will have a real and material impact on the country and its citizens. The DSAs are meant to reflect the ‘independent assessment of the Fund’ and provide guidance on the amount of debt that may need to be written down in order to restore debt sustainability. Public scrutiny of this analysis is therefore critical. On the other hand, there is the concern that, once this information is in the public domain, it will prompt large-scale capital flight, including the possible sale of debt to vulture funds, aggravating a country’s debt risks and vulnerabilities. Governance challenges can also come into play and complicate the picture.

For example, civil society organisations are often concerned at the ‘fragmented landscape of opaque, informal creditor forums’ which can result in long-drawn-out closed-door negotiations. One particular case, that of Puerto Rico, illustrates that a scenario can potentially arise in which an authority tasked with a debt restructuring might be seen as being more aligned with creditors’ interests than with the wider public interest. The Financial Oversight and Management Board put in place from 2016 to assist Puerto Rico restructure over 72 billion US dollars in debt was plagued by allegations that US Government appointees to the Board were likely to favour a restructuring deal more favourable to bondholders, while imposing punishing austerity on the island’s citizens. While an IMF or World Bank led DSA does not apply in this case due to the territory’s particular constitutional status, the key point remains that access to information and transparency in the context of a debt restructuring can act as an important check and balance. For some civil society actors and research bodies, this type of concern lends weight to the argument that some form of independent evaluation body is required for the sovereign debt restructuring processes, which would both serve as a reliable source of information and also provide advice on the options for future policy.

New guidance from the IMF on information sharing in the context of debt-restructuring operations states that, ‘in general, the draft debt sustainability analysis document itself cannot be shared and should be kept confidential until it is endorsed by the Executive Board and published’. However, it also provides for some flexibility on a case-by-case ba-

sis, including the disclosure of more limited information to different stakeholders at different stages of the debt negotiation process, including principally the private-sector and official-sector creditors, subject to certain confidentiality safeguards being in place. These include for example private-sector actors being required to sign a non-disclosure agreement (NDA) or agree not to trade debt. They all require however, the approval of the debtor country. As such, the IMF is keen to emphasise that it is at ‘its legal limit’ with regard to what it can share with external stakeholders.

Overall, it is clear that many actors believe there is insufficient information in the public domain, both while negotiations are ongoing as well as after agreements on restructuring are reached. This includes, but is not limited to, the DSA. This means there is a lack of accountability to ordinary citizens, who are ultimately those who are required to pay, according to the terms of any final agreement. As debt risks have risen, UN, civil society and academic proposals for some form of ‘fair and transparent sovereign debt resolution mechanism’ are increasingly relevant. According to civil society, this type of mechanism would resolve some of their key transparency and accountability concerns by putting in place processes which establish a right for all stakeholders to be heard in the debt restructuring process (including creditors and citizens organisations), while standardised debt restructuring procedures and the publication of the outcomes of the process would enhance legitimacy.

Some of these ideas are in fact endorsed by many countries around the world. In 2015, 136 countries voted in favour of a non-binding UN resolution which states that debt restructuring operations should be guided by key principles, such as transparency, equitable treatment and impartiality. Overall, the need to improve the architecture for debt crisis resolution is pretty much universally acknowledged, including by the G20 and in the UN. The UN’s 2023 Financing for Sustainable Development Report for example argues that “improving debt transparency supports cooperation in restructuring negotiations” including by building trust between different stakeholders. Slow and limited steps have been taken to strengthen cooperative approaches, most notably through the Common Framework, which brings together key official bilateral creditors to agree on a joint debt restructuring approach with a debtor in trouble. But their slow pace and a lack of transparency has undermined confidence in such new initiatives, and it is clear much more must be done.

than the model suggested, and risk ratings were adjusted from low to moderate or moderate to high (Afghanistan, Burkina Faso, Haiti, Kyrgyz Republic, Mali, Federated States of Micronesia, Rwanda, Samoa, Togo and Tuvalu); in the other four cases, the country was 'upgraded', i.e. deemed at lesser risk than the model suggested (Bhutan, Cambodia, Nepal and Timor-Leste). Of the countries where judgement was used, the reasons cited included: political instability, insecurity, violence or conflict (Haiti, Mali); uncertainty over continued access to concessional finance or a potential shift in the future financing mix from grants to loans (Afghanistan, Burkina Faso); temporary breaches which would be mitigated in some way (Bhutan, Nepal and Timor-Leste); export volatility (Cambodia, Tuvalu); vulnerability to natural disasters and/or climate change, or simply to 'multiple shocks' (Haiti, Rwanda, Samoa, Togo, Tuvalu).

One observation is that it is not especially clear why judgement has been applied in some country cases but not in others, particularly when – on the surface – they face quite similar stresses. For example, climate risk and exposure to natural disasters are cited as reasons for the application of judgement only in Haiti, Samoa, Rwanda and Tuvalu yet these are widespread (and increasing) vulnerabilities. Security considerations and institutional fragilities are highlighted in Haiti and Mali but are also a challenge in several other low-income countries. Similarly, uncertainty over access to future donor concessional finance would also seem to be a fairly widespread concern in the current context.

When it comes to SRDSAs, less information is available on the use of judgement. Here, IMF made available data at an aggregate level but not at an individual country level. This showed that, based on 75 countries, the use of judgement led to changes in the overall risk assessment in eight cases; seven of these were downgrades, i.e. the sovereign risk was deemed higher than the model suggested, while one was an upgrade.⁴²

Notwithstanding the more limited information available on SRDSF countries, it is not necessarily clear to outside observers why judgement has been applied in one case and not another. This leads to questions over the extent to which judgement is being applied consistently across countries, the extent to which its use is adequately explained, and whether it is leading to better, more accurate results. The IMF reports that the use of judgement in LIC DSAs has fallen recently (down to about 22 per cent versus 30 per cent prior to the last review).⁴³ Despite this, the IMF acknowledges continued challenges. In its 2021 review of the SRDSF framework, the IMF reported itself that, '[judgement] has not been applied in a transparent manner' (IMF 2021). It also stated that, in most cases, team judgement did not actually perform any better than the econometric model in accurately predicting debt risks. Of 16 debt stress

episodes recorded in market access countries between 2013 and 2017, six were correctly predicted by the framework, while in only three cases (Albania 2014, Bosnia and Herzegovina 2016, and Suriname 2016) did team judgment accurately predict greater risks than were picked up by the model. In six cases, team judgement did worse than the model (IMF 2021).

This last point is crucial. If flexibility is intended to support DSF users in incorporating other factors to arrive at a more accurate result, then combined with 'realism tools,' which are meant to perform a reality check on the assumptions that sit behind DSAs, one question is why such a strong bias towards optimistic growth forecasts persists. Indeed, researchers and civil society actors have found over-optimism to be 'regular and intrinsic' within DSAs over the last decade (Rehbein 2022). For example, the German debt campaign organisation, *Erlassjahr*, found that in 90 per cent of DSAs carried out between November 2020 and September 2022, the IMF determined that 'downside risks' predominated. In 30 per cent of cases, these downside risks were considered 'exceptionally high', yet the DSA forecasts were not adjusted accordingly (*Erlassjahr* 2023). *Erlassjahr* also found that in DSAs over the last 20 years, the higher the debt level and the higher the debt distress risks, the more optimistic are the DSA forecasts for economic growth and fiscal adjustment (*Erlassjahr* 2023).

The latest MAC SRDSF review has proposed some changes to enhance transparency in the use of judgement, and to further mitigate against overoptimism. These include analysing sovereign debt risks over three time-horizons (near, medium and longer-term), with a judgement based risk assessment assigned at each time horizon, and any deviations from the model better explained (IMF 2021). At the same time, external publication of many of these details is restricted, limiting external stakeholders' ability to scrutinise them. These 'technical fixes' also do not address the 'elephant in the room' – namely the extent to which DSAs are truly independent and impartial analyses, and whether the institutions (or individuals) that carry out DSAs may face political pressure to show debt risks in a particular way.

Political pressure to present an assessment in a particular way can occur for several reasons. One is related to the IMF's role as a lender in times of crisis. According to its statutes, the IMF is only authorised to provide loans to countries that are highly likely to be able to repay them. The need to start an IMF programme means there is a clear institutional interest in showing that debt risks may be lower than they actually are. Another is related to DSAs' signalling role around access to concessional finance. Higher sustainability thresholds might help to compensate for a lack of concessional financing committed from the international donor community. In the case of countries already in

⁴² Information supplied by the IMF in November 2023, as requested by the author.

⁴³ Perspective shared at expert roundtable, New York, September 2023

There is a consensus that climate change poses macro-critical risks to national economies, yet to date climate risks have been inadequately incorporated into both the MAC SRDSF and the LIC DSF, a point acknowledged by the institutions in their various review and evaluation processes. For example, the World Bank's Independent Evaluation Group (IEG) recently reported that attention to climate change issues and natural disasters had improved. But at the same time it stated that only 60 per cent of all DSAs discuss the issue. This is despite calls from member countries, civil society, researchers and others that better incorporating climate change is needed to make DSAs both effective and relevant.

Recent research from the Global Development Policy Centre at Boston University took the methodology for market access countries and attempted to incorporate climate-related shocks more fully in order to explore the results. Data was provided for the exercise by Co-

lombia and Peru. It looked at risks related to both a 'physical' climate event and those associated with the higher investment levels required to adapt to climate change during the transition to a 'greener' economy. It found that climate risks lead to higher public-debt trajectories than suggested by both countries' DSAs, but rise particularly sharply where countries pursue higher investment levels to respond adequately to climate change. They find that only a low 'green' investment pathway creates no significant risks for public-debt sustainability in the case of Colombia.

These are critical findings which, if incorporated adequately into DSAs, could help to inform international policy discussions on public debt and the availability of adequate concessional finance. From a transparency point of view however, it is not clear why this critical issue has taken so long to start to be addressed more seriously, despite multiple calls from external experts for the DSAs to do so.

default or undergoing debt restructuring negotiations, over-optimistic projections can also lead to a lower potential debt-relief envelope, lowering the burden on creditors. Pressure to show low(er) debt risks can also be brought to bear by large systemically important borrowers to the institutions who are keen to access new funds from them. All of these reasons fuel perceptions that the documents are not fully impartial or transparent.

Although this issue is recognised as problematic, the measures being adopted to address it are less persuasive. In the most recent MAC SRDSF review, for example, it is suggested that changes in the way judgement are used will help insulate staff from political pressure (IMF 2022). Ultimately however, this tension can only fully be resolved when DSAs are carried out by a truly neutral body.

3.3 Dialogue and engagement

Trust and confidence in DSAs are also built through active engagement with external stakeholders, via clear and transparent processes which provide a means for external actors to engage in DSAs, inform policy dialogue, and recommend changes in approach. It can be particularly important where there may be differences of opinion. External stakeholders need to be confident that their suggestions will be heard and taken seriously.

Dialogue and engagement on DSAs are described as important by the Bank and the IMF. They report that external stakeholders are invited to provide input into periodic DSF review processes, and consultations with civil society and other stakeholders also take place on the frameworks. Staff report that they are receptive to being challenged.⁴⁴ Civil society and researchers also report that requests for information and data are usually met positively.⁴⁵ There is also a means to send comments on the MAC SRDSF template online via the IMF website (IMF Debt Sustainability Analysis for Market Access Countries).

Less clear however is the extent to which this engagement has had a material impact on the design and implementation of the frameworks, and has led to key shifts in approach. While key documentation on the regular DSF review processes is publicly available which explains what changes have been made to the frameworks, it does not indicate how interactions with (or research by) external stakeholders may have influenced particular changes in approach.⁴⁶ Why certain ideas were not taken further is also not clear. For example, civil society organisations and researchers have made long-standing calls for more public disclosure and have also raised concerns around over-optimism bias, the role of the Country Policy and Institutional Assessment (CPIA) in the LIC DSF, and the need for the frameworks to integrate the Sustainable Development Goals (SDGs) and climate change risks more systematically.

⁴⁴ Perspective shared in stakeholder interviews.

⁴⁵ Perspective shared in stakeholder interviews.

⁴⁶ Perspective shared in stakeholder interviews.

They have also raised issues around the narrow focus in DSAs on ability to repay versus the needs to take a broader view and consider states' abilities to meet the basic needs of their populations or pursue green growth investment pathways.⁴⁷ Yet there is a perception that these proposals have received limited attention – though climate change has been picked up on more recently.

4. Ways forward

DSAs are anything but easy, since they involve making a prediction about an unknowable future. But in a world characterised by increased uncertainty, and where debt risks are on the rise, it is critical that DSAs should be a tool that is fit for purpose. Increased transparency can help to drive continuous improvement, foster trust and confidence, and enable better policy advice.

As this paper has shown, some important steps have been taken over the years to improve transparency in DSAs, including better public disclosure, initiatives to upskill various stakeholders in the frameworks, and strengthened external engagement. There are however further transparency measures which can be taken to ensure DSAs can be a trusted, relevant and effective tool.

One is to move towards a system where there is a 'presumption of public disclosure' in all DSAs. DSAs are meant to inform new borrowing by decision-makers, including elected parliamentarians. This borrowing is, in turn, meant to support the public interest. As such, this information should be in the public domain and restrictions on disclosing information should be extremely limited and based on evident public interest. This means that different public disclosure policies as currently applied to market-access countries and low-income countries would no longer stand. The underlying data sets should also be publicly available to enable external stakeholders to scrutinise the data and the assumptions on which the DSAs are being formulated.

Another key issue relates to how DSAs could be made more accessible to non-specialised stakeholders, particularly at the national level where DSAs are most important but are often underutilised. This component is about much more than simple publication on a website and is about what stakeholders are able to interpret with the information provided to them. This is essential to drive accountability, particularly at the borrower country level. Important and relatively straightforward steps could be taken which would help to make DSAs more 'user-friendly'.

These include adding an up-front table which summarises the main macroeconomic and debt assumptions which un-

derpin the DSA and have been used to arrive at the overall risk level. This could help non-specialised audiences to more easily understand that the output is a result of these assumptions. Up-front tables should also provide more detail around how and why judgement may have been used and what its results were. A more simplified Excel template could also be useful. Better availability in local languages, and much better signposting on the two institutions' websites as to where different language versions may be available, could help to enhance take-up at the country level. Access to historical DSAs could also be simplified to enable interested actors to easily scrutinise past DSAs and understand what the documents 'got right'. Historical DSAs are however not that easy to locate. While the World Bank's DSA site includes a link to the 'full inventory of historical DSAs', the link instead takes the user to a broader online 'library' which does not list DSAs as a searchable category of documents. Neither the Bank nor the IMF has a search function on its website specifically for 'Debt Sustainability Assessments', as they have for many other categories of documents. The development of a user-friendly searchable DSA database could be useful for increasing 'traffic' to the documents.

This paper has also shown that there is a need for more transparency in the institutions' confidence levels in the quality of the data being used to formulate DSAs. Understanding where there may be concerns around data quality is crucial since DSAs are meant to inform policymakers' decisions to enter into new loans. Yet readers are not alerted to potential concerns around poor quality data. The institutions need to be more explicit around whether the quality of the data they are working with is considered satisfactory, where there may be deficiencies, and what impact these deficiencies have on the assessment (and their confidence levels in it). A potential scorecard or traffic-light approach, similar to that employed in the Debt Management Performance Assessment (DeMPA) diagnostic tool, could alert the reader to whether or not the data is considered high quality and complete (World Bank IEG, 2023). The DSAs could also indicate whether the country's debt data is in compliance with the World Bank's Debt Reporting System. These could help to incentivise and raise standards in debt reporting by borrowing countries. These measures would, in turn, be reinforced via the automatic publication of borrowing countries' DeMPA assessments, most of which are not currently publicly available. Currently, only two countries – Cabo Verde and Honduras – have recent DeMPA reports that were published later than 2020 available online.⁴⁸ As with DSAs, there should be a "presumption of disclosure" with DeMPA reports, which would provide external stakeholders with a fuller picture of a country's strengths and weaknesses in terms of debt management, including how well it performs on transparency. It would also enable

⁴⁷ See for example: Civil Society position on the IMF and World Bank Debt Sustainability Framework Review, 2018: https://www.eurodad.org/civil_society_position_on_the_imf_and_world_bank_debt_sustainability_framework_review

⁴⁸ For the full list of published DeMPA reports, see: <https://www.worldbank.org/en/programs/debt-toolkit/dempa> Of the DeMPA reports that are publicly available, most are extremely old (i.e. 10–15 years old).

external stakeholders to scrutinise the DeMPA methodology and its findings more closely, thereby supporting the World Bank in strengthening its approach where needed and also reducing opportunities for potential bias in DeMPA reports.

Greater transparency is also needed around the use of judgement versus the mechanical model. This is particularly important in a context in which increased volatility and uncertainty are anticipated due to climate change and other risks, which may lead, in turn, to the need to employ ‘judgement calls’ more frequently. While the most recent MAC SRDSF review acknowledges previous transparency concerns around the use of judgement, it still allows judgement calls to be partially deleted prior to publication. The use of judgement in all DSAs must be clear, and transparency would be enhanced with more detailed descriptions of the use of judgement oriented towards non-specialised audiences. As the analysis has shown, a common set of issues also tends to crop up that may (or may not) require the use of judgement. These include issues like climate change, environmental disasters, political or institutional instability, conflict and insecurity, access to concessional fi-

nance, and others. Improved guidance to staff on the use of judgement when these common sets of issues arise could help to better standardise their use in DSAs, while strengthening transparency.

Dialogue and engagement with external stakeholders are essential to foster trust and drive improvements to the frameworks but can only really be seen as effective when there are meaningful feedback loops in place, and external stakeholders are clear on how their research and policy advice are being used and acted upon. The regular review processes and the documentation which are released afterwards could easily contain details of the organisations and institutions that were consulted, the issues that were raised in these discussions, the proposals that were put forward, and the institutions’ responses to them. This would help to drive more accountability.

All of these measures could help to make DSAs a more transparent and trusted tool. But they are also just one small piece of a much bigger picture. Transparency in DSAs must also be situated in a much wider context – one in which there are increased efforts by both borrowers and

Transparency in DSAs: a snapshot of published material

Table 1

Description	Availability	Observation
LIC DSAs	Mostly available	Mostly publicly available, though some are published with a delay. Staff assessments published
MAC SRDSAs	Often available but with publication restrictions	Staff risk assessments, underlying data sets and assumptions not published
Guidance Notes	2018 Guidance Note for LIC DSAs 2013 Guidance Note for MAC SRDSF 2022 Guidance Note for MAC SRDSF	Oriented towards technical audiences
MAC SRDSF excel template	Public template published in 2014	Blank template only
LIC DSF excel template	Publicly available	Completed templates available online but not the most recent data
Training materials	LIC DSF Interactive Guide LIC-DSF online training course	Mostly oriented towards technical audiences
LIC DSF review materials	2017 review materials	
MAC SRDSF review materials	2003, 2005, 2011 and 2021 review materials	
Historical DSAs	Mostly available for LICs	Not easily ‘searchable’ online. No single point where they can be accessed

lenders to put in place an enhanced transparency regime throughout the whole borrowing cycle. This is increasingly recognised as critical to help ensure both accountability and long-term debt sustainability.

There are a number of initiatives aiming to do this. These include UNCTAD's, AFRODAD's and EURODAD's voluntary guidelines which set out what responsible – and transparent – behaviour looks like when it comes sovereign borrowing and lending (UNCTAD 2012). These state clearly that both lenders and borrowers have a duty to uphold transparency, and that there should be limitations on legal restrictions to public disclosure when it comes to debt information. In addition, there are ongoing efforts to support developing countries to strengthen their debt management capacities, including building capacities on debt recording and reporting, improving IT systems and strengthening legal frameworks for the public disclosure of debt information. These are provided by organisations like the Commonwealth Secretariat, UNCTAD and the World Bank. A greater share of efforts, however, has tended to focus on transparency by borrowers, and this has not yet been replicated by improved transparency practices by most creditors – whether public or private. For example, new initiatives like the OECD Debt Transparency Initiative, which aims to collect data on private-sector lending to developing economies, has enjoyed only limited success to date and, overall, the landscape of debt data is characterised by a fragmented set of databases, with limited data points and often little comparability (OECD). Often this is more to do with creditors' recalcitrance than with that of borrowers. Some debt data is also hidden behind expensive paywalls, putting it out of reach for many nonprofit organisations or research bodies. These challenges all need to be addressed if true transparency (and, by extension, accountability) is to be achieved.

Concerns around political pressure and its perceived or actual influence on assessments are also only likely to be fully addressed once there is confidence that DSAs are truly independent and impartial assessments. Transparency can certainly mitigate some of this, but it will only go so far. While the Bretton Woods Institutions clearly have the requisite skills to carry out such technical assessments, there is also a strong case that they should be developed by an institution (or institutions) that does (or do) not have clear conflicts of interest. Longer-term, this could help to establish more trust in DSAs. It could also help lay the foundations for an enhanced transparency regime for sovereign debt as a whole. With debt risks on the rise, the time is right.

About the author

Gail Hurley is a senior advisor and expert on sovereign debt and development finance. She has held senior positions at Finance Earth, UNDP and EURODAD. She has also served as a Senior Fellow at Development Initiatives. She has authored many research papers and articles on the issue of sovereign debt, including a particular focus on the debt challenges of small island developing states. She is author of the chapter on 'sovereign debt and the right to development' in the Oxford University Press publication, 'Sovereign Debt and Human Rights' published in 2018.

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Interviews

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Erlassjahr
European Network on Debt and Development (EURODAD)
International Monetary Fund (IMF)
Latin American Network on Debt and Development (LATINDADD)
Overseas Development Institute (ODI)
United Nations Department of Economic and Social Affairs (UN DESA)
United Nations Conference on Trade and Development (UNCTAD)
World Bank
World Bank Independent Evaluation Group.

Chapter 4

The Practice of Sovereign Debt Sustainability Analysis

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Summary

Debt Sustainability Analyses (DSAs) have major implications for debt negotiations. The outcomes of these negotiations have distributional consequences between the debtor and its creditors on the one hand, and amongst creditors on the other hand. DSAs are not only technical analyses – they are based also on assumptions that are essentially political – but may also affect the outcomes of debt negotiations. The study of the institutional and political frameworks under which DSAs are performed has been largely overlooked by the literature. This paper analyses the practice of DSAs, with a focus on the frameworks in which it occurs, the implications of the choices of assumptions, and the consequences for debt negotiations.

1. Introduction

Sovereign debt sustainability refers to the capacity of a sovereign state to meet its scheduled debt commitments, given relevant economic, social, and political constraints. When debt is not sustainable, it needs to be restructured. Failing to restructure unsustainable debts is detrimental both for the debtor and its creditors. Without such restructuring, there will be contractionary economic policies that typically induce recessions in economic activity, many of which are deep, depressing tax revenues and possibly even increasing the burden of debt in relation to output.⁴⁹ Unsustainable debt burdens entail efficiency losses, not only as a result of the reduction in aggregate demand, but because of distortions in incentives, especially when the debt overhang is severe (Krugman, 1988). These adverse effects may be so large that even creditors (as a group) can benefit from granting debt relief,⁵⁰ as relief under certain circumstances increases both output and the expected payments for creditors. In less technical terms: failing to restructure debt when it is unsustainable shrinks the size of the pie to be distributed between the debtor and the creditors.

The assessment of debt sustainability is done through debt sustainability analyses (DSAs). The practice of sovereign DSA influences debt negotiations and restructuring outcomes, with potentially large economic, social, and political consequences. DSAs influence how much debt restructuring occurs and when it occurs. Because there is inevitably uncertainty about the future evolution of the economy, there is uncertainty about whether the country's debt is sustainable. An overly optimistic DSA may entail more IMF lending and less debt write-down by private parties, with the result that there will be another crisis down the road. By then, some of the private creditors will have taken advantage of the temporary respite to withdraw their funds –

making the resolution of the debt crisis even costlier. This, in turn, means that the economy's prospects are diminished from what they otherwise would have been. In short, there are real economic and distributional consequences to a DSA, and that inevitably means that politics and power will matter (cf. Guzman, Colodenco, and Wiedenbrug, 2024).

In the discussion below, we will illustrate how this plays out in the implementation of DSAs – creating quandaries for the staff and board of the IMF. As we shall show, this in turn often leads to intellectual inconsistencies in the practice of DSAs: assumptions, for instance, about interest rates or market access which are not themselves consistent with the hypothesized evolution of the economy. None of this should be a surprise: if the IMF grants loans based on power but is restricted to the fulfilment of certain bureaucratic rules concerning DSAs (such as the rule that states that the IMF can only make a loan if, with the loan and the associated policies, the country's debt is sustainable, with a high probability) the DSAs will bend to power (that is, the assumptions made in the DSA will be those that ensure that the country is eligible for the loan).

A deeper understanding of the practice of DSAs, which this paper attempts to provide, may not only help the IMF develop better lending practices – with a lower probability of one crisis being followed by another – but also help developing countries and emerging countries in crises achieve the deeper restructurings they need to restore long-term economic growth and prosperity.

2. What is a DSA?

A DSA is an assessment of the sovereign's capacity to meet its scheduled debt payments. Any DSA is a forward-looking exercise: it requires forming expectations about the future debt-repayment capacity. These expectations will, in turn, depend on the (expectations of) actions of economic agents, which in turn depend on beliefs about the beliefs of those agents. Thus, any DSA entails judgments regarding the evolution of the economy of the country under analysis, including the expectations of others whose behaviours and decisions determine the country's financing capacity (Guzman and Heymann, 2015).

The concept of debt sustainability is intricate, as it depends on heterogeneous beliefs about the future and views on the functioning of the economy under analysis over which major conflicts during negotiations among different stakeholders are common.⁵¹ Debtors and different groups of creditors tend to have different views in debt restructuring negotia-

⁴⁹ See the revision of cases of fiscal adjustment over the recent history (Jayadev and Konczal, 2010, 2015), as well as Guzman and Stiglitz (2020), Stiglitz and Heymann (2014), and Stiglitz (2015) on the mechanisms that relate unsustainable debts to macroeconomic performance.

⁵⁰ We emphasize that it is in the interests of the creditors *as a whole*: intra-creditor fights contribute greatly to a delay in restructuring and to restructurings being too small. See Guzman, Ocampo, and Stiglitz (2016).

⁵¹ There are conflicts in views about what the policies should be, what they will be, and what the consequences of alternative policies would be.

tions. Those differences in views are often not just based on discrepancies over technical criteria but on competing interests, with creditors wanting less restructuring arguing that countries have a greater capacity to repay than they may really have. Generally, they want the DSA to employ assumptions that show that that is the case.

3. Debt sustainability in an environment of incomplete contracts

There are two different literatures regarding why defaults may occur. In one strand, defaults are the consequence of lack of commitment to or enforcement of debt contracts. A default is an optimal decision for a utility maximiser sovereign – and may occur even when there is *capacity* to pay (Eaton and Gersovitz, 1981; Aguiar and Gopinath, 2006; Guzman, 2014). In the other strand, defaults are the consequence of a lack of capacity to pay – a problem of *sustainability* (Guzman and Stiglitz, 2020; Roubini, 2001; Wyplosz, 2007).

However, the distinction between the two perspectives, between commitment and sustainability, is not as clear as this discussion might suggest. Typically, a country could repay more, but with a high *expected* but *uncertain* cost, e.g. the political unrest may be so great that future output will be reduced, and given these uncertain outcomes, the expected repayment actually received by the creditor may be reduced. In other cases, the expected repayment by the creditor might be increased, but the costs borne by the debtor are judged to be unacceptable. Only where there is a “Laffer curve” – where any actions designed to increase repayment actually result in reduced repayments, so that there is an absolute maximum expected repayment – is “capacity” well-defined. Otherwise, the capacity to pay becomes ambiguous.

The feature common to both literatures is that debt contracts are incomplete, as they do not stipulate the transfers between the debtor and its creditors according to the realization of every possible state of the economy. If there were complete debt contracts, there would not be sustainability problems. Each contingency would be considered and implicitly resolved in the debt contract, and it would never be necessary to restructure contracts to satisfy transversality conditions; there would be no insolvencies. In practice, however, with incomplete contracts, expectations about future outcomes determine the sustainability assessment (Guzman and Heymann, 2015).

The incompleteness of sovereign debt contracts is a defining characteristic of sovereign debt. It will always be that

way, as it is simply impossible to even know the full space of states, let alone to write contracts that are indexed to every known possible state, especially so because of problems of verification ex-post.

The existence of a positive risk market premium implies that creditors do not expect full repayment according to the schedule of debt payments established in the bonds or loans in every state of nature. However, debt contracts do not fully specify the states of nature in which the scheduled payments would not occur according to the ex-ante expectations that justify the compensation for taking risk. Thus, the scenarios in which sovereign debt restructurings are needed are not fully defined in the contracts, and when risks materialize such that a debt restructuring becomes necessary, creditors do not fully “lose” the rights⁵² stipulated in those contracts, until they willingly accept an exchange offer, or are forced to do so via super-majority positions (such as those defined in collective action clauses included in the bonds). This opens the door for creditors’ litigation against sovereign debtors when the rights stipulated in the contracts are infringed, regardless of the economic circumstances that led to the infringement.⁵³

In practice, in situations of debt distress, creditors generally fail to recognize the ex-ante rationale for a risk premium. The usual situation features a delay from every side in recognizing the sustainability problem followed eventually by the start of a debt negotiation featured by disagreements based on competing interests among all stakeholders – the debtor versus the creditors, and among the creditors (Brooks et al., 2015), with creditors often arguing that they should be entitled to receive a high interest rate, *even after a restructuring that allegedly restored sustainability, which would imply that there would be no justification for such a high interest rate*. Conflicts arise whose resolution is generally protracted and highly costly given the absence of an international rule of law. The costs of delay may be very high: the uncertainty associated with unresolved macroeconomic debt crises has aggregate demand and supply effects that lead to underutilization of the factors of production of the economy. There are negative externalities of these aggregate demand effects, hence the social costs of delay are generally larger than the private costs, making a market-based solution inefficient (Stiglitz, 2010). The costs may be so large that both the creditors and the debtor can be worse off as a result. However, the delay may be costlier for one side than the other: typically, the debtor country suffering the crisis is in a bigger rush to stop the escalating social and political unrest than the bondholders that can more patiently wait for a resolution that is more favourable to their interests.

⁵² As we have explained, under incomplete contracts that include a compensation for risk, those “rights” are ambiguous. In the case of a debt contract, when the debtor fails to fulfill some term in the contract, even if there was a compensation for the risk of such “failure”, the creditor has to decide that the failure is a triggering event. The contract specifies what happens next, but the remedy may not be fully defined in the contract. For corporations, bankruptcy laws are meant to complete the contract. For sovereigns, there is no such mechanism, and judges’ discretion often gets larger, as it happened in the dispute between Argentina and the vulture funds following the 2001 country’s debt default (Guzman and Stiglitz, 2014; Chodos, 2016).

⁵³ Debt contracts could, of course, specify certain situations where the creditor is not entitled to full repayment, e.g. acts of war or nature that make it impossible to repay, but typically they do not do so. More recently, some bonds specify conditions, like hurricanes, in which there can be postponement of repayment.

4. The key questions for a DSA

The first question of a DSA is: *Under the current set of policies, is debt sustainable with high probability?*

If the answer to the first question is negative, the next question of the DSA is: *Are there feasible alternative policies that would make debt sustainable with high probability?* The objective at this stage is to assess whether there are *policy adjustments* that would ensure debt sustainability with high probability, such that a debt operation that involves relief can be avoided. As we will see below, the endogenous effects of policies need to be considered when addressing this question— for example, a public spending cut to improve the fiscal balance will likely decrease economic activity; hence it will decrease tax revenues.

If the answer to the previous question is also negative, then the DSA formulates a third question: *What is the size of relief that would take the debt to a sustainable position with high probability?* The DSA at this stage provides guidance for a debt restructuring.

5. Misaligned incentives for timely restructurings

Sovereign debt restructurings generally come in the form of “too little, too late” (Guzman, Ocampo, and Stiglitz, 2016), meaning that restructurings are delayed and when they do occur, the amount of debt relief is not enough to restore debt sustainability, making crises longer lasting and costlier, increasing the risk of a future crisis. This phenomenon is explained by multiple factors, many of which go beyond this paper. One important factor is incentives: in the current environment for sovereign restructurings, both the creditors and the debtor face a structure of incentives that leads to delays in addressing unsustainable debt burdens (Orszag and Stiglitz, 2002; Diwan et al., 2024). With such a delay, they can keep the possibility of the upside in case a positive shock occurs. This incentive on the creditor side is exacerbated by the high return to sovereign debts in default before there is a judgment – an annual rate of 9 per cent under New York law, set in 1981 when the annual inflation rate in the US was close to that figure (see Blackman and Mukhi (2010), Cruces and Samples (2016), Guzman, 2020), a matter that is currently under discussion in the New York legislature. The corporate governance of the creditor institutions also creates principal-agent conflicts of interest within those institutions: those making the decisions in a restructuring process may put their own incentives before the best interest of the institutions they work for. Agency problems on the part of creditors may be especially severe when those who are partially responsible for having granted the loan are also responsible for restructuring: they don’t want to “admit” publicly what a bad decision they made just a few short years earlier.

On the other hand, the government of the debtor may have an incentive to pass on the problem (at least partially) to the next government. In fact, the political economy incen-

tives on the debtor side are a large determinant of government’s behaviour: there may even be campaign financing coming from creditors, leading to capture. Besides, creditors’ lobbying that blames debtor governments for unreasonable demands in restructuring processes and instils the fear that if the government is not willing to reach a softer deal the economy will suffer disastrous consequences may be effective at creating a public perception of pessimism, which is politically costly for governments.

Furthermore, inter-creditor conflicts may result in bargaining problems, where the outcomes result in inefficient delay.

DSAs are an important tool to at least smooth these problems of incentives on all sides of a debt negotiation. If they are properly conducted, they make it more difficult for those on both sides of the bargaining table to pretend the problem is smaller than it is.

6. The elements of a DSA

The assessment of debt payment capacity is based on three main dimensions:

1. The definition of constraints.
2. The determination of the set of feasible policies and their endogenous feedback effects, i.e. the relationship between policies and economic performance.
3. The specification of belief distributions about the economy’s trends and shocks and the relationship between policies and those belief distributions.

In the practice of DSA, there are different views regarding the definition of each of those three blocks. Those differences are to a large extent borne from competing interests in the resolution of the conflicts that emerge in situations of macroeconomic inconsistencies, in which the satisfaction of the constraints imposed by resource availability requires a distribution of losses. We next turn to analyse each of those three blocks.

6.1 The constraints for debt sustainability

The sustainability of the public debt depends, first, on the capacity of the public sector to meet its transversality condition, which states that the expected present discounted value of the primary balance must be equal to the value of the outstanding debt when the analysis is performed.

There are several caveats that must be considered when we refer to the transversality condition of the public sector as the constraint that defines sustainability.

First, at least some of the public debt may be denominated in foreign currency, which implies that the exchange rate is

also a determinant of debt sustainability. This in turn means that the transversality condition of the aggregate economy (the sum of the intertemporal budget constraints of the public and the private sector, i.e. the balance of payments constraint, but ultimately the performance of the tradable sector) is also a constraint for debt sustainability.

Second, not every level of primary balance may be feasible for a society given its economic, social, and political environment. For instance, it would be inconceivable that a country would turn over its entire GDP to foreign creditors, leaving its population destitute. How much of a country's GDP can be turned over without setting in motion unacceptable political, social, and/or economic dynamics? World War II is often blamed on the victors of World War I for imposing harsh reparations on Germany – so harsh that the resulting adverse economic conditions set in motion very adverse politics. This means that there may be other non-economic constraints that determine debt sustainability – in the literature they have been dubbed “political constraints” or principles-based constraints (as those defined by the United Nations General Assembly Resolution A/RES/69/319 in 2015; see Guzman and Stiglitz, 2016b; Guzman, 2018). Obviously, there is judgment entailed in deciding where these constraints lie.

Third, there are interactions between fiscal policies and fiscal outcomes, which takes us to another dimension of the debt sustainability analysis – namely, the endogenous feedback effects associated with economic policies, which we will analyse below.

Fourth, the fact that the satisfaction of transversality conditions depends on expectations about variables that will be realized in the future means that the definition of beliefs for the distribution of the variables that enter the budget constraints is also an input for the DSA. For the policy analyst, what matters is their beliefs about the likelihood of various outcomes, but those in turn depend in part on beliefs about the beliefs of the agents in the economy; if they believe that the debt relief is insufficient, then they may not be willing to invest, given that they think the crisis will fester or recur; the policy analyst may think those agents' beliefs are wrong – but she will have to deal with them as they are, and explore the consequences for debt sustainability.

These beliefs (both on the part of agents and of the policy analyst) themselves are endogenous, and there obviously may be disagreements about both what those beliefs are and how they depend on the policies undertaken.

The typical situation in debt negotiations features differences in views about the relevant constraints. Creditors typically claim that the maximum primary fiscal balance or the maximum trade balance that is feasible is larger than

what the debtor claims. However, that is not always the case, for multiple reasons: first, there is the possibility of a problem of representation on the debtor side, as a government might favour interests that are different from the taxpayers' interests⁵⁴ (but no government would say so). Second, ideology, such as the belief that being more friendly with creditors (i.e. showing that the government is willing to put immense pain on its people to repay debts) will increase confidence and investment in the economy, may shape debtors' decisions. Third, there may be short-term political economy incentives to side with creditors' common views, when not reaching a deal in a debt restructuring proves too costly for an incumbent government.

Defining the relevant constraints for debt sustainability entails taking a stance not only on how to address the distributional conflict between the debtor and its creditors but also, to some extent, on the inter-creditor conflict, as this part of the analysis also requires determining the debts to be included in the perimeter of debt to be restructured. In restructuring processes, discrepancies may arise over the eligible debt for restructuring based on currency, residency, jurisdiction of issuance (law), and even the type of creditor (Guzman and Stiglitz, 2023). For instance, the inter-creditor conflict will be influenced by the decision of whether to pool local currency and foreign currency debt or just include foreign currency debt in the constraint that will define the universe of debt for which there is rollover risk (in the IMF DSA, this constraint refers to the gross financing needs, as we analyse below), or whether to include or exclude the debt of the state-owned enterprises.

6.2 The endogenous effects of macroeconomic and fiscal policies on debt sustainability

The primary fiscal balance is an endogenous variable. Spending and tax decisions have endogenous feedback effects on economic activity and hence on tax revenues – mathematically, the primary balance is a fixed point, meaning that it depends on economic activity while economic activity depends on both the variables that determine the primary balance, i.e. taxes and public spending. There may also be multiple possible equilibrium policies (including debt repayments) rather than just one fixed point. And there may be, within the set of admissible policies, a maximum feasible repayment.

Similarly, the trade balance, which determines the availability of foreign exchange, is also an endogenous variable. Austerity policies that undermine the productivity of the tradable sector, such as cuts to public spending in knowledge or infrastructure, may decrease exports in the future. On the other hand, austerity policies that depress economic activity also contract imports, and *ceteris paribus*, that leads to more availability of foreign exchange in the short

⁵⁴ For example, when they have been captured by creditor interests.

term – which at times creates the seemingly puzzling situation in which the deepening of recessions is associated with both an increase in short-maturity foreign currency bond prices (which reflect the larger probability of repayment in the short term given the larger availability of foreign exchange) and a reduction of the long-maturity foreign currency bond prices (which reflect the lower probability of repayment in the long term given the damage to the productive capacity of the tradable sector of economy).

In debt negotiations, there are often discrepancies between creditors and debtors in views over the size and even sign of the multiplier effects associated with fiscal policies. Typically, creditors claim that the contractionary spending policies will boost confidence and hence investment. On the other hand, the debtor is more concerned about the negative multipliers on economic activity of contractionary policies, and especially in situations where factors of economic production are under-utilized. In several cases over the last couple of decades these discrepancies between perspectives became very prominent. These include Greece in the 2010s (see Varoufakis, 2016), Argentina following the default of 2001 (see Guzman, 2020), or the ongoing case of Puerto Rico (see Gluzmann, Guzman and Stiglitz, 2018). The evidence overwhelmingly supports the prediction that contractionary fiscal policies in such situations is contractionary and that well-financed expansionary policies in recessions contribute to recovery (see Jayadev and Konczal (2010), contrasting Alesina and Ardagna (2010); Blanchard and Leigh (2013); Auerbach and Gorodnichenko, (2012)). Creditors have incentives to overestimate the “confidence effect” or underestimate the fiscal multipliers, to preserve the possibility of higher payments in the upside scenarios – this force may prevail in the creditors’ view even if there are efficiency losses associated with unsustainable debts or restructuring processes.

6.3 Beliefs

A DSA requires a definition of the distribution of shocks.⁵⁵ From the viewpoint of analysts and market participants, those distributions are subjective: no one knows (even if someone pretends to) the true probability density functions of the variables that determine debt sustainability; in other words, we do not live in a world of rational expectations. The market risk premium reflects market expectations, which includes heterogeneous expectations of many participants, but even when market participants’ expectations are correct on average, there is no simple relationship between the observed market price and the true risk of default. Indeed, it appears that on average market participants in a diversified portfolio of sovereign bonds would have received a high (beta-adjusted) return over the last two centuries (Meyer, Reinhart, and Trebesch, 2022). This is especially problematic given that the most optimistic are the

“marginal buyers” of the bonds (Geanakoplos, 2010). It thus appears that rational investors buying sovereign bonds are more than adequately compensated for the risks borne.

The definition of the distribution of shocks is also associated with discrepancies in debt negotiations. Under incomplete contracts, and for the same reasons discussed in relation to preserving the possibility of higher payments in the upside scenarios, creditors will tend to be more optimistic than the debtor about the baseline scenario.

Recent restructurings (for example, Suriname, Sri Lanka, and Zambia) are including contingent clauses in the restructured bonds. While contingent debt such as GDP-linked bonds is supposed to improve debt sustainability, by aligning scheduled debt payments with payment capacity, the model that is emerging in those restructurings is not moving in that direction: Instead, the contingent clauses are asymmetric, implying that in the case of upside scenarios creditors get the benefits, but in the case of downside scenarios payments are not lowered (or not lowered symmetrically, as in Sri Lanka), even though the bonds’ coupons include a significant risk-premium.

7. Who performs DSAs?

Sovereigns in debt distress rarely perform DSAs. They rely on the DSA conducted by the IMF or at times also on the work of external advisors, such as the international investments banks that sell sovereign advisory services. This reliance on external actors often means that the interests of the citizens of the country in distress are not adequately represented in the frameworks for debt negotiations, as the incentives of other stakeholders or external advisors are generally different from those of the sovereign whose debt is being restructured. As we have already noted, incentives matter when it comes to some of the critical assumptions in doing a DSA.

Most governments of developing countries do not even have the capacity to do a DSA. Their debt management offices do not develop those institutional capabilities and hiring staff capable of performing these analyses may prove impossible given the discrepancies between salaries offered by governments and those available in the private sector or at international financial institutions. In the very few cases in which a government produces a DSA, creditors have incentives to de-legitimize it. Even if the analysis is sound, creditors generally claim that the government’s position is biased, and that it is not acting in good faith. They often have the available resources to succeed in such campaigns.

Private or bilateral creditors do not follow the practice of publishing DSAs, either at the time the loan is made or when it may have to be restructured. If they did, their

⁵⁵ This is only part of the disagreement in probability distribution of outcomes, which is what matters for bonds trading.

views at the time of providing financing – including the foreseen circumstances that justified the risk premium – would be clearer. China did publish a “Debt Sustainability Framework for Participating Countries of the Belt and Road Initiative” (Ministry of Finance of People’s Republic of China, 2019), but as of the time of writing has not yet published specific DSAs for the countries to which it lends, hence we are still unable to evaluate China’s DSA. Given China’s growth as a lender, it will not be surprising if it continues developing frameworks for the implementation of its debt policies, just as the IMF does on a regular basis. If China becomes the largest lender of countries in debt distress, Chinese authorities may wonder why their country needs to follow the rules determined by Western nations.

The IMF is the main player for conducting DSAs and it is usually the only actor to do so. The IMF DSA, launched in 2002, is a tool for the Fund’s lending policy.⁵⁶ The IMF produces DSAs either as part of routine surveillance of its member countries through their Article IV consultations, or in the context of its financing programs. While some define the IMF DSA as a strictly technical tool to mediate over the conflicts that arise in debt crises, in practice it is hard (or virtually impossible) to immunize the IMF DSA from the influence of the interests represented by the Fund’s shareholders, which often represent special interests within the creditor countries, such as those of the American financial sector, when those interests benefit from bailouts financed by IMF financing or from the IMF conditionalities in IMF-financed programs.

The IMF has two frameworks for assessing debt sustainability: one for low-income countries, the IMF-WB Low Income Countries (LIC) debt sustainability framework (DSF), which is mostly focused on external debt sustainability (LICs are the countries that usually meet their external financings needs through concessional resources) and is also used by the World Bank. The other DSA framework is for “market-access countries (MAC).” The MAC framework, which applies to the countries that have access to international private credit markets (or have had it in the past, with the IMF-financed program designed to restore access) and is more focused on fiscal (public debt) sustainability. For the IMF, a public debt is sustainable when the government is able to meet all its current and future payment obligations without exceptional financial assistance, e.g. funds from the IMF (Hakura, 2020).

The lines between the two frameworks are at times blurred. The LIC framework has been applied to countries that have had more market access than some other countries covered by the MAC framework. For example, Ghana’s latest DSA was done using the LIC framework, and Sri Lanka’s latest DSA was done using the MAC framework (Maret and Setser, 2023).

According to its Articles of Agreement, the IMF should not lend to countries whose debt is not sustainable now or whose future sustainability is at high risk. The IMF’s disbursements are supposed to be linked to debt restructurings with the country’s private or official bilateral creditors if debt is not sustainable. In debt restructuring cases under an IMF arrangement, the IMF’s DSA is used to identify the amount of debt relief needed.

8. Five issues with the IMF’s DSA practice

8.1 Having an IMF DSA undertaken and published

The common practice is that sovereign debt restructurings occur in the context of a program with the IMF. However, a country might well choose to restructure without having a program with the IMF. In fact, under certain circumstances, a restructuring could provide enough relief to restore the financing conditions for countercyclical macroeconomic policies. An example of this kind was Argentina’s 2001 debt crisis resolution (cf. Damill, Frenkel, and Rapetti (2015); Guzman, 2020).

If a country is restructuring its debt under a program with the IMF, the IMF staff produces a DSA. However, if the country is not negotiating a debt restructuring under a program with the IMF, it can still request a Technical Assistance on debt sustainability analysis to the IMF (a form of a stand-alone DSA). This is what happened in Argentina’s 2020 debt restructuring (IMF, 2020), which set a precedent that other countries could follow. That DSA indicated that there was need for significant relief to restore debt sustainability.

The IMF DSA may influence creditors’ expectations and bargaining power – although the influence of the IMF DSA on creditors’ expectations depends to some extent on its validation by the IMF’s major shareholders. Of course, if the DSA suggests that there will need to be greater restructuring than the creditors believe is justified or are willing to provide, the creditors will attempt to delegitimize the DSA. Regarding the private sector, as a standard practice it demands interest rates and employs discount rates that are inconsistent with debt sustainability, seemingly without regard for the cognitive dissonance. This means that even if most of the assumptions that go into building a DSA (say about investment) are similar, the conclusions of the private sector on debt sustainability and an IMF DSA may differ markedly.

There is another dimension in which the IMF DSA may have influence: domestic political economy dynamics. IMF (2020)’s analysis for Argentina illustrates this point. One of us, Guzman, was the finance minister of Argentina at the time of the debt restructuring with private creditors that was conducted in 2020 and holds the view that even if the IMF DSA were not as effective as it could have been in anchoring for-

⁵⁶ For an analysis of the history of the IMF DSA, see Laskaridis (2021).

eign private creditors' expectations, it did matter significantly for anchoring expectations domestically. While domestic political economy pressures for a quick agreement were rising, even if the terms that would enable a quick deal would not grant the necessary relief in debt payments to restore sustainability, the IMF's publication eased those domestic pressures. In a country with a long history of trouble with the IMF, where the IMF is seen as one of the culprits of some of the most tragic economic crises in the country (most notably, the economic crisis of 2001), being more lenient to creditors than deemed necessary by the IMF could prove costly to those in the center-left of the political spectrum.

Another concern for stakeholders in debt negotiations focuses on the timing of the IMF DSA and its release. Sri Lanka is a recent case in point: it took seven months from the moment in which there was a "Staff Level Agreement (SLA)" (meaning an agreement on a financing program between the country's government and the IMF Staff) and the approval of that agreement by the IMF Executive Board in October 2023. However, standard practice is that the DSA is not released until an IMF-supported program is approved by the Executive Board, what in turn delayed the release of the DSA. The publication of the IMF DSA may have a larger impact if it does not need to wait until an IMF-supported program is approved by the Executive Board, as it would enable broader societal debate about debt negotiations much sooner.

In fact, if countries had legislation that mandated the approval of a program with the IMF by the National Congress, the documents that constitute the Staff level agreement would need to be submitted to the Congress before they are approved by the IMF Executive Board, meaning that they would become public information earlier. This has been the situation in Argentina since 2021, when Congress approved the "Law for Strengthening the Sustainability of Public Debt", which was applied for the first time in 2022, when the country reached a deal with the IMF to refinance the debt with the Fund borrowed through the Stand-by Arrangement of 2018.

It is precisely because the DSA may be so influential that some parties may not want the IMF to do a DSA, or if it does one, to not publicly release it. For instance, creditors claim that a DSA showing the country can only repay a more limited amount than they would like is tilting the bargaining against them – and they try to have access to the IMF DSA before it is published, to influence it before it is too late. Private creditors might believe that they can push around indebted countries more – persuading them to accept a smaller debt restructuring, one that would, with a high probability, lead to another crisis down the line.

8.2 Dealing with the IMF itself as a large (senior) creditor in DSAs

Under IMF rules, a condition for lending under the "exceptional access policy" (meaning, lending sufficiently large amounts), is that according to the IMF MAC-DSA, the

country is likely to regain access to credit markets to roll-over existing debts and repay the Fund at the time the debts come due – the timing of which may depend on the outcome of a debt restructuring.

However, given the IMF preferred creditor status, private creditors may not be willing to provide any financing when they see a large outstanding debt stock with short maturity with the IMF. In fact, large loans from the IMF may decrease the likelihood of regaining access to the private credit markets (Krahnke, 2023). In that scenario, if the IMF staff correctly and realistically assesses the situation and if the lending occurs, there will be an inconsistency between the staff's (realistic) assessment and the IMF lending rules, as under those circumstances the only realistic source of financing for rolling over those debts would be the IMF itself, but the IMF staff is obliged to pretend that that's not the case (if the IMF program is to proceed). Obviously, that means that some unrealistic assumptions go into the analysis, with the objective of making the DSA overly optimistic. Of course, a realistic assessment would entail recognizing a longer exposure to the IMF, which under current IMF policies also entails assuming higher lending rates in the form of surcharge payments. (Stiglitz and Gallagher, 2022; Gallagher et al., 2024).

The implication of assuming (more realistically) no market access for more prolonged periods, when the IMF is a large creditor, is the need for deeper debt restructurings with other creditors, which creates a conflict between the IMF and the other, more junior, creditors – all or most of which may be influential with the IMF shareholders.

In extreme cases of too much debt with the IMF and no prospects of access to international credit markets, there might not be a debt operation that restores debt sustainability unless either the debt with the IMF is restructured or the IMF changes its lending terms, for instance by extending maturities. However, neither of those options is a prerogative or decision of the staff, who is responsible for producing the DSAs.

In practice, the way the IMF deals with this quandary is by making heroic assumptions about the prospects of markets access, to create a pretence that it is meeting its own rules. The most notable example in this respect is Argentina's Stand-by-Arrangement of 2018 – a record loan of \$50 billion, then increased to \$57 billion, out of which almost \$45 billion was disbursed (the disbursements were stopped when the government that had signed the deal with the IMF lost the primary elections of 2019 by a large margin).

To grant that loan, the IMF Staff had to determine that the criteria for "exceptional access" were met. The IMF deemed that at that time, in a context of a currency run in which the country had been cut from international credit markets, the country's public debt was sustainable, arguing that there was a liquidity problem rather than a sustainability problem. Argentina's government position was that the rea-

son for the liquidity problem was political: More specifically, financial markets' fear, in the view of the government, that the opposition party would win the next presidential elections. In that view, lending to address the liquidity problem was equivalent to lending to bolster the chances of the incumbent government (Mauricio Macri's administration) of winning the presidential election – essentially, a political loan, which is not consistent with the IMF rules. (That is, the loan would only have made sense if the actual probability of the opposition was negligible; for at any higher probability, the debt would not have been sustainable “at a high probability”).

To justify that Argentina would be able to repay the IMF according to the loan amortization schedule, the IMF staff deemed that Argentina's treasury already had credit market access during the implementation of the program, because it managed to both roll-over a small fraction of the Argentine law USD-denominated debt with short maturity (one year) held by local investors and had access to financing in Argentine pesos through notes with very short maturities. In its first review of the Stand-by Arrangement, from October 2018, the IMF Staff judged that “*despite the recent tightening of financial conditions, Argentina continues to maintain access to domestic financial markets, where residents and non-resident investors have continued to participate in recent peso- and USD-denominated bond placements*” (IMF, 2018).

There are multiple problems with this interpretation made by the IMF staff regarding debt sustainability. First, the staff's interpretation did not reflect that the Argentine peso notes had been subscribed by speculative foreign investment funds and hedge funds that were exploiting *carry trade* opportunities in a context of a policy of high interest rates. This interpretation amounts to a positive assessment of *carry trade*, a behaviour that it is well known that may be destabilizing for countries' exchange rate dynamics, and that in part explains why the IMF has been endorsing the adoption of macro-prudential capital account regulations (capital flows management, in the IMF language) over the last two decades.⁵⁷

Second, the assessment that there was access to credit markets was made in a context in which the country had already been cut off from international credit markets. The interpretation of the IMF staff assumed that being able to roll-over a very small fraction of its USD-debt with residents, written under local law, rolled over into new debts in local currency, meant that the prospects of repaying the IMF when the debts came due were good. There are important differences between USD debt written under local law and the standard foreign debt, and the amount rolled over was a miniscule fraction of the debt that was owed in USD. Success in rolling over a small amount of the former was no real indication of Argentina's ability to roll over the lat-

ter. To our knowledge, this interpretation by the IMF staff, justifying that the country would be able to repay the IMF on time because it had access to some domestic financing while the program was in place, has no precedent.

Most importantly, Argentina couldn't repay the loan when it came due, and still can't. The country couldn't then, and can't now, find foreign private creditors to lend it money at reasonable interest rates (at rates that reflect markets' judgment of sustainability) to repay the IMF. Ex post, clearly the IMF was wrong. However, looking back, it is hard to construct a scenario in which the country could have paid the money back. The DSA should have said not that “the debt was sustainable but not with high probability” but instead that there was a small probability that the debt was sustainable – and it should have recommended not lending under those circumstances, as the rules indicate. It might seem a massive failure in analysis; but our discussion above explained why, given the political nature of the loan and the inconsistency in the rules and practices, such a failure was itself almost inevitable.

As this paper goes to press, the IMF Independent Evaluation Office is producing an assessment of the IMF implementation of its exceptional access policy, which will have to judge whether the IMF staff's interpretation of the criteria for exceptional access in the case of Argentina was sound.

8.3 Considering local vs. foreign currency debts in the IMF DSA

The IMF DSA includes constraints that define debt sustainability. The typical constraints refer to thresholds for the debt to GDP ratio, the gross financing needs (GFN) to GDP – with the intention of limiting rollover risks – and the ratio of foreign exchange debt service to GDP or to exports. When those thresholds are exceeded, debt is deemed likely to not be sustainable.

Under the IMF “market access framework”, defined above, it has become common practice (urged by holders of foreign currency debt) to pool local and foreign currency debt together for debt sustainability assessments. This methodology is affecting incentives in debt negotiations: holders of foreign currency debt push for domestic currency debt to be the variable of adjustment – even though the sustainability of domestic currency vs foreign currency debt must be assessed under theoretical frameworks that capture marked differences across those disparate kinds of assets (Guzman and Stiglitz, 2023).

Pooling debts in domestic and foreign currency under the same measure of GFN, when the capacity to rollover different debts is different, is obviously problematic. Sri Lanka's

⁵⁷ The academic literature on macroeconomic externalities that sheds light on the optimality of the adoption of capital account regulations precedes the IMF's adoption of such a stance [see Stiglitz (2000), Korinek (2010, 2011), Farhi and Werning (2014), Erten, Korinek, and Ocampo (2021), Stiglitz and Ostry (2022), Ostry (2023)].

recent restructuring is an example of the perils of that methodology: Sri Lanka's treasury clearly faces a higher rollover risk of its foreign currency debt than of its domestic currency debt, largely debt with the central bank, but the methodology implemented by the IMF does not capture that difference appropriately (see Maret and Setser [2023] for a more comprehensive analysis).

Besides, capital account regulations would have a different impact on domestic currency debt held by residents or non-residents, and therefore would provide an additional instrument to deal with external debts in domestic currency that is not available for external debts in foreign currency.⁵⁸

Ultimately, the principles that guide debt restructuring processes may affect the development of domestic capital markets and thus affect their capacity to borrow in domestic currency in the future. In turn, this affects currency mismatches, exchange rate instability, and debt sustainability. DSA are contingent on policies and practice, which are influenced by the stance taken regarding those principles. Thus, the IMF choice of principles for DSA and debt restructuring is a matter with practical consequences both in the short term and long term.

8.4 Choosing the right discount rate in IMF DSAs

While for a debtor what matters in a restructuring is the amount of relief, for a creditor what matters is the value of the security it receives in exchange for the unsustainable bond or loan. Thus, debtors need to frame debt negotiations in terms of sustainability prospects, while creditors usually frame debt negotiations in terms of the "recovery" value of the bonds that are issued in the swap. While the latter is irrelevant from the viewpoint of the restoration of debt sustainability, the exercise may be necessary for the assessment of the different treatment to different classes of creditors – what's been called "comparability of treatment" in the literature (Guzman and Stiglitz, 2023; Diwan et al, 2023).

Assessing the present discounted value of a bond that will be issued in a debt restructuring presents an obvious problem: the choice of a discount factor for a security that has not been issued yet. The choice of such a discount factor is often associated with disagreements between the debtor and its creditor.

In a scenario that assumes that a restructuring is effective for restoring debt sustainability, the discount factor should

be close to the risk-free rate. However, this is not what happens in practice. Typically, creditors claim that the discount factor should be much higher than the risk-free rate, using standard credit rating categories. For instance, for Zambia, a CCC rating implied the use of a discount factor of about 10 per cent for measuring haircuts on the restructured debt in its last restructuring. The use of a high discount factor should instead be seen as an indication that the restructuring is not deep enough to restore debt sustainability.

Interestingly, calculations of numbers that economically do not mean much may have political consequences: when creditors' framing prevails, public debates over restructurings are framed in the wrong terms. The country is told that a large fraction of the debt is being written down. In reality, using the correct discount rate, the creditor loss may be nonexistent, and the actual write-down may be smaller than what is needed to restore debt sustainability. At the same time, the financial press abroad often excoriates the government for a presumably large debt write-down.

A DSA is supposed to guide a restructuring so that sustainability is restored and there is a low probability of default ex-post, i.e. after the restructuring. However, the IMF often uses interest rates that assume that the market will still deem the debt as risky even when market access is restored. That way of proceeding entails the recognition that the restructuring will not restore sustainability with a "sufficiently high" probability, which should in turn suggest the need for more relief, which would in turn generate lower discount factors.

Markets, however, are often irrationally pessimistic (on average, as we noted above, there have been excess risk-adjusted returns on sovereign bonds), and so they may demand an interest rate that is significantly higher than the safe interest rate, even when debt would be sustainable if the bonds carried an interest rate appropriate for the risk.⁵⁹ The higher interest rate, however, affects the debt sustainability: there are multiple equilibria in the assessment of debt sustainability, such that it is even possible that larger write-downs are associated with higher prices for the new bonds.⁶⁰

8.5 Addressing overoptimism and its deeper causes

Finally, an old concern – but worth revisiting as it is still relevant today – refers to the overoptimism in the IMF baseline growth scenarios in DSAs. Overoptimistic forecasts in IMF DSA, often the consequence of underestimat-

⁵⁸ The adoption of capital account regulations eliminates the full arbitrage that leads to the interest rate parities for securities denominated in different currencies, implying that the real returns on domestic currency bonds will not move proportionally with market yields on foreign currency bonds.

⁵⁹ Sometimes creditors seem to expect the new bonds to have the same high interest rates as the old risky bond. Any reduction in interest rates is viewed as a write-down. This makes no sense: the high premium reflected the risk of default; with sustainable debt restructuring, there is no justification for that premium. And if that premium had not existed in the first place, the probability of a necessary restructuring would have been lower. This is a classic problem of multiple equilibria in the servicing of public debt (Calvo, 1988).

⁶⁰ There is some controversy about how appropriate to measure (or even think about) a write-down. In a crisis, a country's debt usually has a low value – a \$100 bond might sell for \$25. If the exchange bond sells at \$25, one could view it as a 75 per cent write down on the face value, but a 0 percent write down on current market value. However, the current market value depends critically on expectations of the terms of the exchange bond. If the exchange bond has a lower value than the current market price, it simply means that the market was overly optimistic about the terms of the exchange bond.

ing the contractionary policies of the standard conditionalities in IMF programs, not only contribute to the “too little too late” syndrome in sovereign debt restructuring but also allow for IMF lending in situations in which, under more reasonable and unbiased forecasts, debts would be deemed unsustainable.

On the other hand, creditors, and even financial advisors hired by governments in restructuring processes, focus their complaints on the other side of the problem: if the IMF is not optimistic enough in its baseline assumptions, it may be difficult to strike a deal aligned with the IMF DSA, given creditors’ incentives and their demands that there be little write-down of the principal and limited reductions in interest rates. In those situations, the IMF staff finds itself again caught between a rock and a hard place: if they are sound in their analyses and realistic in the assumptions used in the DSA, they will be blamed for the failure to reach a deal (albeit an unsustainable one). They can, of course, be unrealistic and thereby contribute to, or at least facilitate, an unsustainable debt deal – but then they will be blamed when, a few years down the road, another restructuring is required.

The problems we have discussed briefly in this note illustrate the deficiencies of the existing system for sovereign debt restructuring, pointed out in the Stiglitz Report on “Reforming the International Monetary and Financial Systems in the Wake of the 2008 Global Crisis” (Stiglitz et al., 2010).

9. Conclusion

Timely and effective debt crises resolutions are important for economic efficiency and equity, and for this, better debt crises resolution frameworks are needed (Guzman and Stiglitz, 2016a). An important element in any good debt crisis resolution process is a good DSA. This paper has provided insights into how DSAs can be improved, with a focus on the most critical elements in current practice that need more scrutiny.

Despite the importance of DSAs, debtor countries have limited capabilities for conducting them. In our dialogues around the world with policymakers, government officials, and the civil society organizations in debt-distressed countries, we have found little awareness about either their importance or the multiple subtleties involved in their implementation. Countries’ debt management offices and think tanks, especially in countries that are prone to debt crises (where, unfortunately, independent think tanks do not abound) would do well to acquire greater capabilities for conducting their own DSA. We hope this paper makes that endeavour easier for institutions and scholars, especially in countries already in or likely to be in crisis and need debt restructuring. We would also encourage countries undertaking new loans, especially abroad, to undertake a DSA: the question that needs to be asked is “Is this new debt likely to push the country into a situation of lack of debt sustainability?” We suspect many countries facing a debt

crisis today might not be in such a situation had they done a well-founded DSA at the time of the borrowing. At the very least, this paper should provide tools for questioning creditors who claim, on the basis of their own judgements and interests, that the country has greater capacity for debt repayment than in fact it has.

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