



**Debt Sustainability Assessments
& Their Role in the Global Financial Architecture**

ECONOMY AND FINANCE

**An Appraisal of Debt
Sustainability Analyses
Amid Multiple Crises**

Sherillyn Raga
May 2024

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.

Table of Contents

1. Introduction	1
2. Public debt sustainability and the relevance of DSA frameworks	2
2.1 Definition of debt sustainability	2
2.2 DSA frameworks for LICs and MACs	2
3. Performance of DSA growth and debt forecasts	5
3.1 Brief review of the recent literature on performance of IMF growth and debt forecasts	5
3.2 Performance of IMF growth and debt forecasts	6
3.3 Performance of DSA forecasts of debt drivers: Chad, Ethiopia, Ghana, Sri Lanka and Zambia	9
4. Limitations of DSA frameworks in the context of multiple crises	11
4.1 Fiscal multipliers during economic downturns and recovery	12
4.2 Extreme shocks and scarring effects	15
4.3 Judgement in DSAs during the recent crises	18
5. Conclusions	20
5.1 Growing commercial sources of debt in LICs	21
5.2 Fiscal multipliers	21
5.3 Extreme shocks and scarring effects	21
5.4 Greater role of judgement in DSAs during multiple global shocks	21
Appendix 1. Comparison of IMF DSA frameworks for market access and low-income countries ..	23
Appendix 2. Ghana: Judgement in DSA reports during the recent crises	29
References.	32

List of Figures

Figure 1. Public debt in LICs on currency basis (% of total)	3
Figure 2. Net financial flows in low-income countries	4
Figure 3. Forecast error in cumulative 4-year GDP growth	7
Figure 4. Forecast error in changes in debt-to-GDP ratio over 4-year horizon	8
Figure 5. Deviation in GDP from pre-pandemic forecast (%).....	15
Figure 6. Medium-term primary deficit (% of GDP)	16

List of Tables

Table 1. Forecast errors in drivers public debt dynamics	9
Table 2. Fiscal multiplier assumptions in IMF DSA frameworks	13
Table 3. Explicit considerations of fiscal multipliers in IMF DSA reports	14
Table 4. GDP growth under during output shocks: Actual vs forecast under stress-test scenario	17
Table 5. Debt-to-GDP under extreme shock scenarios: Forecast vs reality	18

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 frameworks¹ 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:

¹ 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).

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, macroeconomic 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

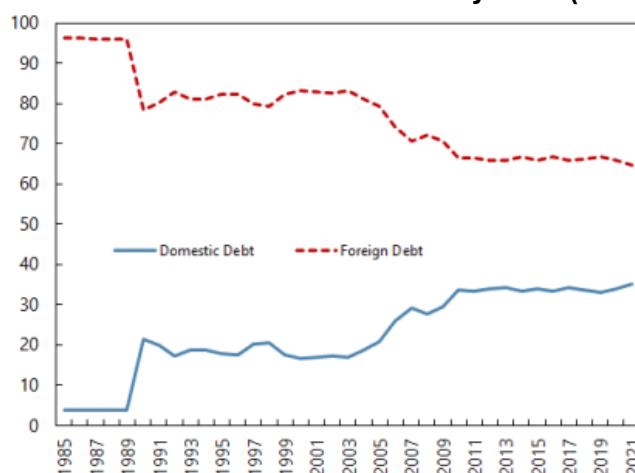
The IMF uses two DSA frameworks – one for LICs (LIC DSF) that is jointly conducted with the World Bank, and another for MACs (i.e. the Sovereign Risk and Debt Sustainability Framework for MACs, or SRDSF). The LIC-DSF is being utilised for DSAs of all countries that are eligible for IMF Poverty Reduction 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).

Figure 1. Public debt in LICs on currency basis (% of total)

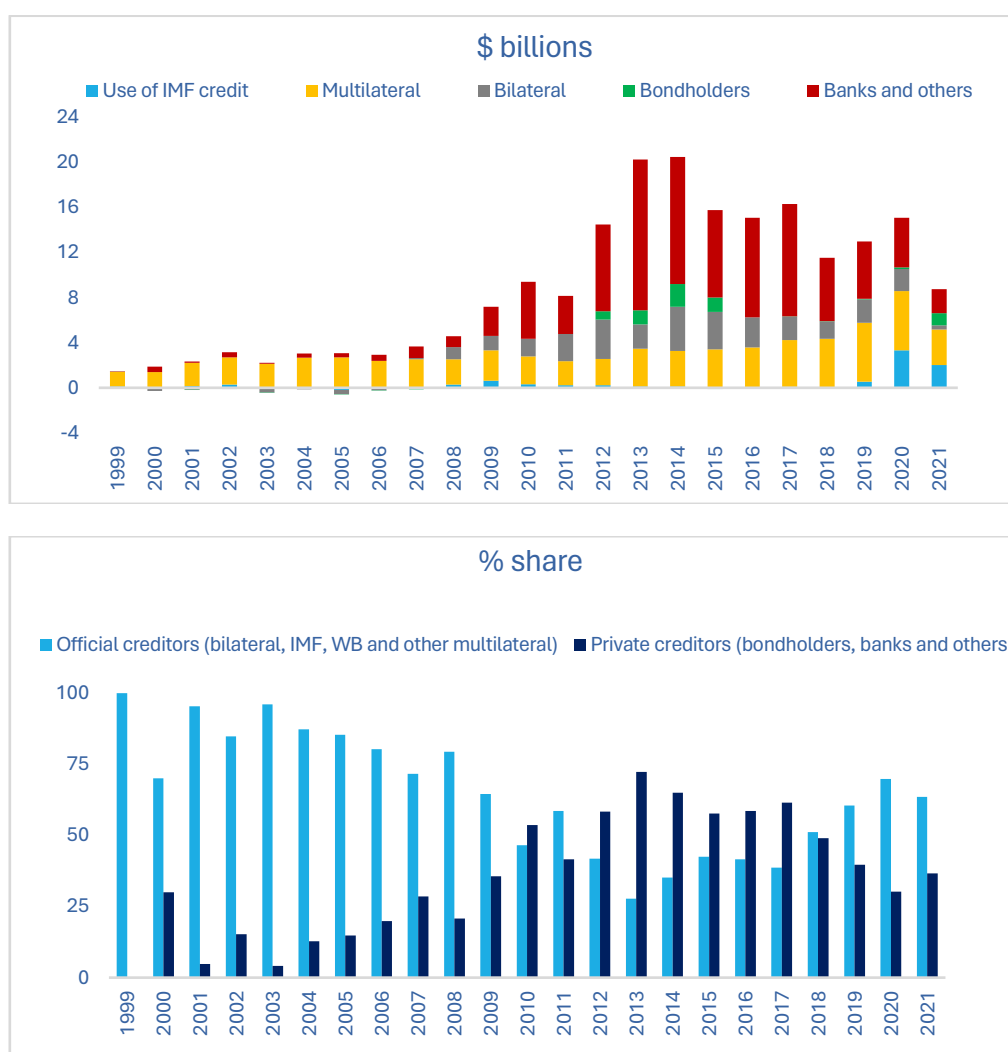


Source: Graph lifted from Chuku et al (2021, p.24)

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 investors (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).

Figure 2. Net financial flows in low-income countries



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

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.

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 literature² 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).

² The review focuses on studies since 2000s with cross-country sample.

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.³ 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 on the World Bank classification⁴. 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.⁵

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 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.

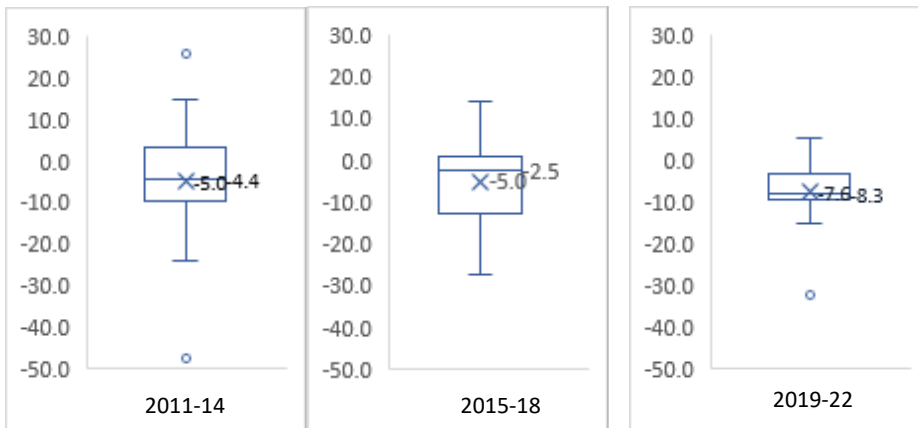
³ For example, forecasts between 2011-2014 are based on 2011 IMF WEO report; forecasts between 2015-2018 are based on the 2015 IMF WEO report, and so on.

⁴ 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.

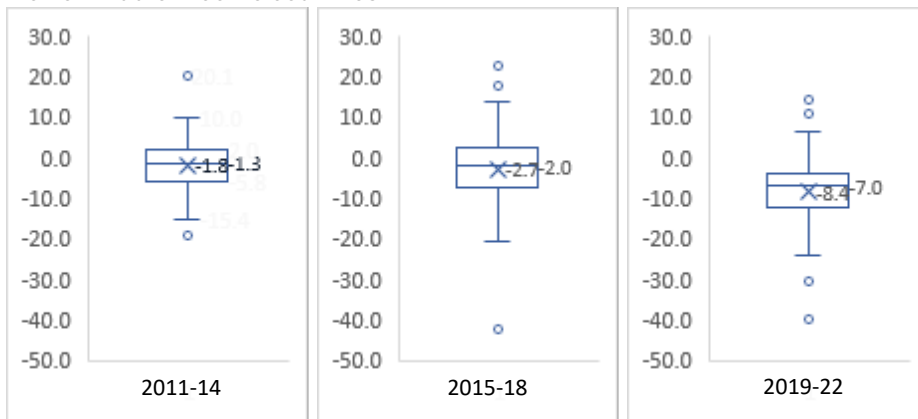
⁵ Data requirements for macroeconomic projections in DSAs are informed by the IMF country teams and WEO forecasts (see IMF 2021b: 62; and IMF 2017: 42). Consultation of the author with an IMF official confirmed the use of IMF WEO forecasts in DSAs especially at and around the time when the WEO report 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).

Figure 3. Forecast error in cumulative 4-year GDP growth
(actual less projections, percentage points, negative = optimism)

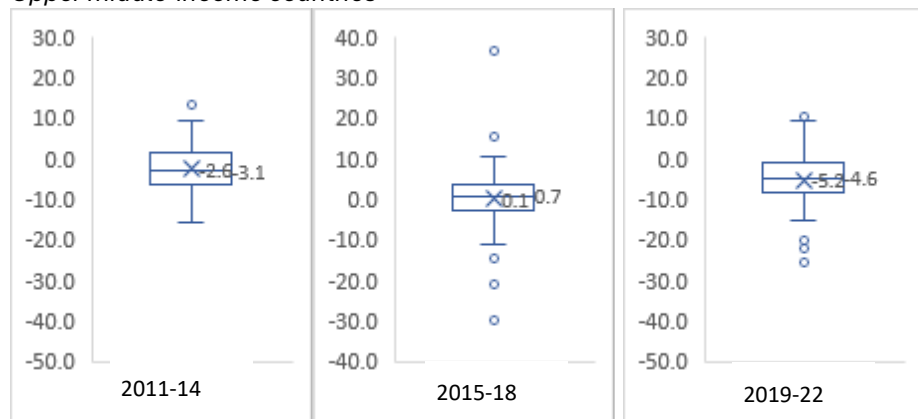
Low-income countries



Lower middle-income countries



Upper middle-income countries

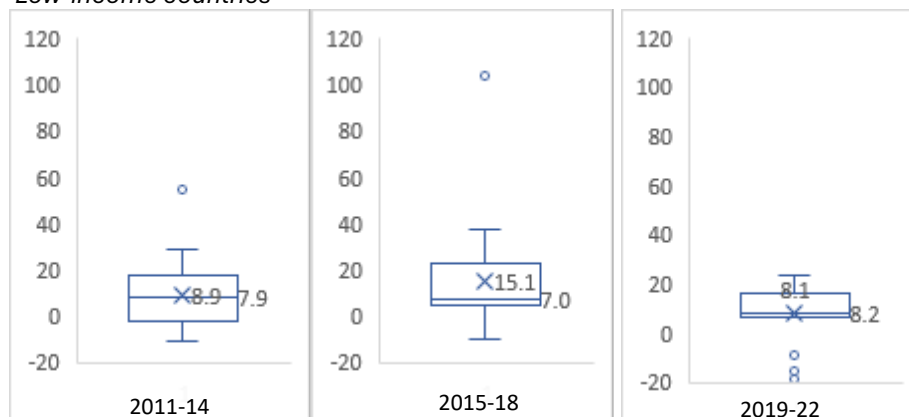


Note: Forecast error is based on actual less forecast cumulative growth rate over a 4-year period. Forecasts are based on the IMF WEO report during first year of the 4 year period (2011-2014 forecasts are based on IMF WEO as of September 2011) and actual/estimated data are based on IMF WEO as of April 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).

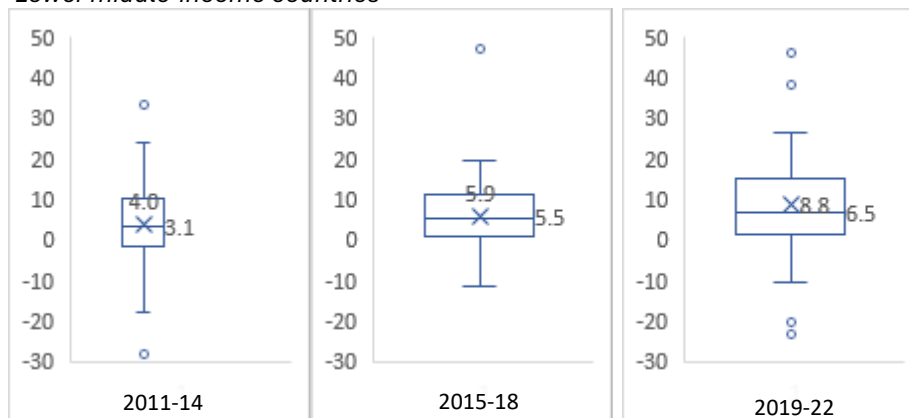
Source: Authors computations based on IMF WEO database.

Figure 4. Forecast error in changes in debt-to-GDP ratio over 4-year horizon (actual less projections, in percentage of GDP, positive = optimism)

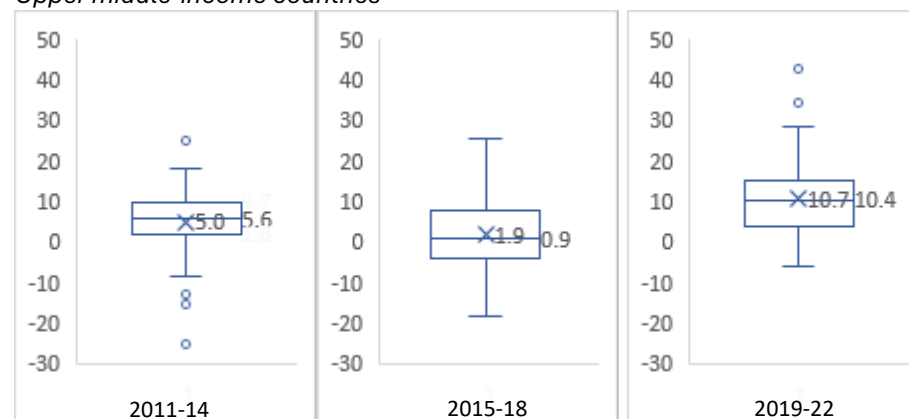
Low-income countries



Lower middle-income countries



Upper middle-income countries



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.

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.⁶

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.

Table 1. Forecast errors in drivers public debt dynamics

(actual less forecast, % of GDP)

Legend:

	Grey	optimistic forecast = worse-than-expected outcome
	Blue	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
<i>o/w from revenue and grants</i>	-5.5	-4.2	-6.2	-9.2	-0.5	-4.2	-2.8	-3.7	-2	3.9	-0.6
<i>o/w from primary expenditure</i>	-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

⁶ 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.

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	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	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.⁷ 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.

⁷ Author's computations based on general government investment data generated from IMF Investment and Capital Stock Dataset.

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 economy-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.

Table 2. Fiscal multiplier assumptions in IMF DSA frameworks

	LIC-DSA	MAC-DSF	MAC-SRDSF (from 2022)
<i>Fiscal multipliers (FM)</i>			
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.
<i>Public investment-growth assumptions</i>			
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.

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).

Table 3. Explicit considerations of fiscal multipliers in IMF DSA reports

	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.

Source: Author's analysis based on IMF DSA country reports.

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:

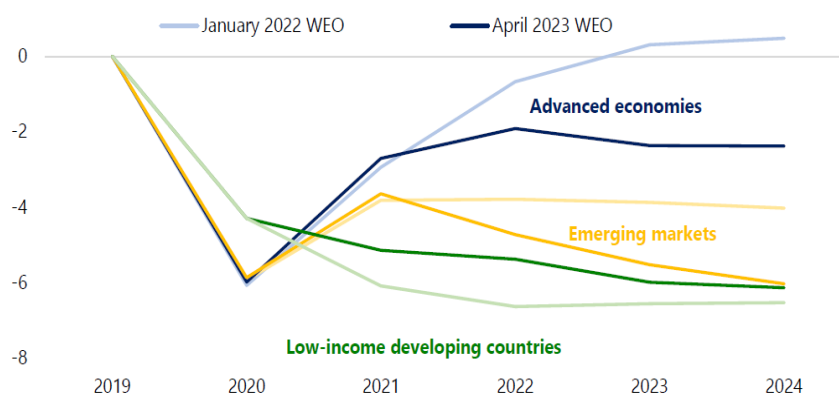
- The IMF DSA frameworks only consider fiscal multipliers in terms of fiscal adjustment, a procedure which assumes that fiscal multipliers used for this purpose have a contractionary effect on growth. Analysis of fiscal multipliers for expansionary policies and by policy instrument is absent.
- The fiscal 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 pandemic. 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).

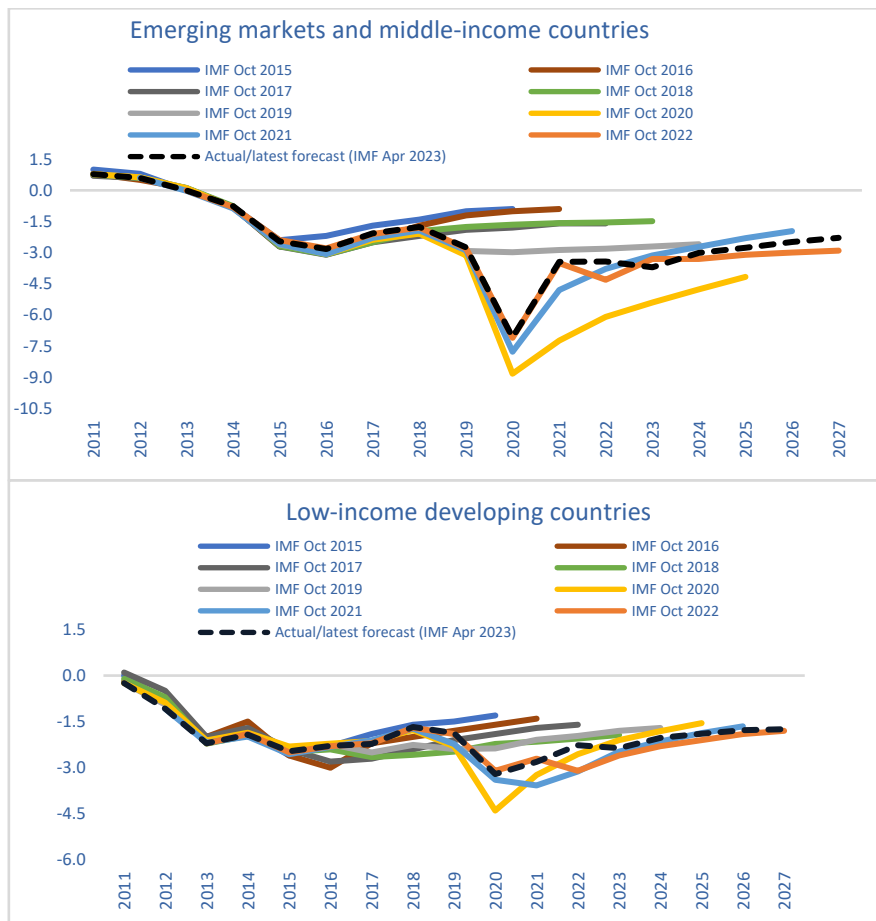
Prolonged periods of depressed output growth can affect debt sustainability through various channels. Scarring effects may lower the tax base, weakening capacity to repay debt and exacerbating indebtedness (Lian et al. 2022). Persistent upward pressure on the budget deficit due to continued expenditures 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).

Figure 5. Deviation in GDP from pre-pandemic forecast (%)



Source: Graph lifted from Jackson and Lu, 2023

Figure 6. Medium-term primary deficit (% of GDP)



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)⁸ – 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.

⁸ 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.

**Table 4. GDP growth under during output shocks:
Actual vs forecast under stress-test scenario**

<i>Basis of GDP shock scenario</i>			
	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
<i>2020 GDP growth (%): Actual vs GDP shock scenario for emerging markets and developing economies (EMDEs)</i>			
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.

Even under the most extreme shock scenario, debt projections may still be optimistic. Table 5 summarises public debt estimates in selected countries⁹ 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 (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).

⁹ 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.

Table 5. Debt-to-GDP under extreme shock scenarios: Forecast vs reality

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	2018	MAC DSF	2022	78.0	92 4/	95.2	17.2	3.2
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.

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 time¹⁰.

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.

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.

¹⁰ Expressed views through written feedback from reviewers and some experts during a roundtable discussion in September 2023.

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	<p><i>Unsustainable debt</i> 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)</p> <p>Related: <i>Sovereign stress</i> 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.</p> <p><i>Debt non-stabilisation under the baseline</i> 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.</p>	<p>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)</p>	<p>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)</p>

Components	IMF SRDSF (latest for MAC)	IMF MAC DSA	IMF and World Bank LIC DSA
Coverage	<p>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.</p> <ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Public-sector debt coverage to be as broad as possible (may be narrow in some cases) • No disclosure requirement on coverage 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • five-years projections (no distinction in horizons) 	<ul style="list-style-type: none"> • Medium-term (up to five years) and longer term (beyond five years) projections
Realism tools	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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.

<p>Medium-term risk indicators</p>	<p>Debt fanchart tool</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 <p>Gross financing needs (GFN) tool</p> <ul style="list-style-type: none"> 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 finaceability index (GFI) is produced based on 3 indicators weighted by predicted power, and index value is split into low, moderate, and high-risk zones <p>*The DFI and GFI produces an aggregate index and feeds into final medium-term risk signal: low/moderate/high.</p>	<p>Fanchart tool</p> <ul style="list-style-type: none"> 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 <p>Macro-fiscal shocks/stress tests</p> <ul style="list-style-type: none"> 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. <p>*The fan chart tool and macro-fiscal chart does not produce an aggregate signal of risk over the medium-term</p>	<p>Macro-fiscal shocks/stress tests</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> • Macro-fiscal covering GDP growth, interest rate, exchange rate, inflation, primary balance • Debt maturity shortening shock • Debt holder shock (rollover rate, new financing) 	<ul style="list-style-type: none"> • 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). 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Contingent liability shock if quantitative trigger for risk of banking crisis is triggered • Allows for customised stress-tests for idiosyncratic risks. 	<ul style="list-style-type: none"> • Contingent liabilities shock related to narrow public debt coverage • Allows for customised stress-tests for idiosyncratic risks
Long-term risk analysis	<ul style="list-style-type: none"> • Optional tools for risks from: population aging, natural resource discovery/depletion, debt amortisations; and climate change. 	<ul style="list-style-type: none"> • Optional extension beyond five-year horizon for specific circumstances such as population aging, ballooning debt service or other considerations. 	<ul style="list-style-type: none"> • 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)

Components	IMF SRDSF (latest for MAC)	IMF MAC DSA	IMF and World Bank LIC DSA
Judgement and communications	<ul style="list-style-type: none"> • 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). 	<ul style="list-style-type: none"> • No aggregate mechanical signals • Lack of standardised bottom-line assessments • Unclear application of judgment (based on team's discretion/tailored assessment) 	<ul style="list-style-type: none"> • 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)

Sources: Author's compilation using IMF policy guidance for LIC-DSF (IMF 2018), MAC-DSA (IMF 2013) and SRDSF (IMF 2022)

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
<i>Macroeconomic projections in baseline scenarios</i>				
1. Were fiscal multipliers (size, persistence, by fiscal policy instrument, by business cycle) considered in medium-term growth projections?	<p>No</p> <p>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.</p>	<p>No</p>	<p>No.</p> <p>Fiscal multipliers were not explicitly considered in baseline scenario projections.</p> <p>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).</p>	<p>Partially.</p> <p>The DSA baseline scenario cited the expected contractionary effects of fiscal tightening and debt restructuring on growth until 2025.</p> <p>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. (pp12-13)</p> <p>The DSA report did not cite specific fiscal multiplier size or persistence considered for the baseline scenario.</p>
<i>Stress-test scenarios</i>				

	Pre-Covid19	Years with overlapping crises		
	November 2019	April 2020	July 2021	May 2023
<p>2.1 For pre-Covid: What were the most significant (stress-test) shock/s that would affect the debt sustainability outlook?</p> <p>2.2 For crisis years: Did the DSA reports revise/customise stress test scenarios to reflect the large/overlapping shocks?</p>	<ul style="list-style-type: none"> 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. 	<p>Yes</p> <ul style="list-style-type: none"> 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

	Pre-Covid19	Years with overlapping crises		
	November 2019	April 2020	July 2021	May 2023
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.
<i>Implication of debt profile</i>				
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)

References

- Alesina, A., Favero, C. and Giavazzi, F. (2015) 'The output effect of fiscal consolidation plans' *Journal of International Economics*. Volume 96, Supplement 1, July 2015, Pages S19-S42
- Alichi, A., Shibata, I. and Tanyeri, K. (2019) Fiscal policy multipliers in small states. IMF working paper number WP/19/72. Washington DC: IMF (www.imf.org/en/Publications/WP/Issues/2019/03/26/FiscalPolicy-Multipliers-in-Small-States-46679).
- An, Z., Jalles, J.T. and Loungani, P. (2018) 'How Well Do Economists Forecast Recessions?' IMF Working Paper No. 2018/039 (<https://www.imf.org/en/Publications/WP/Issues/2018/03/05/How-Well-Do-Economists-Forecast-Recessions-45672>)
- Ardanaz, M., Cavallo, E., Izquierdo, A. and Puig, J. (2021) 'Output effects of fiscal consolidations: does spending composition matter?' IDB working paper series no. IDB-WP-1302. Inter-American Development Bank (<https://publications.iadb.org/en/output-effects-fiscal-consolidations-does-spending-composition-matter>)
- Attinasi, M.G. and Klemm, A. (2014) 'The growth impact of discretionary fiscal policy measures' Working paper no. 1697. European Central Bank.
- Baum, A., Poplawski-Ribeiro, M. and Weber, A. (2012) Fiscal multipliers and the state of the economy. IMF Working Paper 12/286 Washington DC: IMF (www.imf.org/en/Publications/WP/Issues/2016/12/31/Fiscal-Multipliers-and-the-State-of-the-Economy40146).
- Beaudry, P. and Willems, T. 'On the macroeconomic consequences of over-optimism' Working Paper 24685. National Bureau of Economic Research (<http://www.nber.org/papers/w24685>)
- Bird, G. (2005) 'Over-Optimism and the IMF' Blackwell Publishing Ltd. Accessed via Social Science Research Network (SSRN) (<https://ssrn.com/abstract=803915>)
- Blanchard, O. and Leigh, D. (2013) 'Growth Forecast Errors and Fiscal Multipliers' IMF Working Paper No. 2013/1 (<https://www.imf.org/external/pubs/ft/wp/2013/wp1301.pdf>)
- Blanchard, O. and Leigh, D. (2014) 'Learning about fiscal Multipliers from Growth Forecast Errors' IMF Economic Review, Vol. 62, No. 2, pp. 179–212.
- Botev, J. and Mourougane, A. (2017) 'Fiscal Consolidation: What Are the Breakeven Fiscal Multipliers?' *CESifo Economic Studies*, Volume 63, Issue 3, Pages 295–316, <https://doi.org/10.1093/cesifo/ifx002>
- Carrière-Swallow, Y. and Marzluft, J. (2021) 'Macrofinancial Causes of Optimism in Growth Forecasts' IMF Working Paper No. 2021/275
- Celasun, O., Lee, J., Mrkaic, M. and Timmermann, A. (2021) 'An Evaluation of World Economic Outlook Growth Forecasts—2004-17' IMF Working Paper No. 2021/216
- Chuku, C., Samal, P., Saito, H. and others (2023) 'Are We Heading for Another Debt Crisis in Low-Income Countries? Debt Vulnerabilities: Today vs the pre-HIPC Era' IMF Working Paper No. 2023/079 (<https://www.imf.org/en/Publications/WP/Issues/2023/04/04/Are-We-Heading-for-Another-Debt-Crisis-in-Low-Income-Countries-Debt-Vulnerabilities-Today-531792>)

Cugnasca, A. and Rother, P. (2015) 'Fiscal multipliers during consolidation: evidence from the European Union' Working Paper No 1863 / October 2015, European Central Bank (<https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1863.en.pdf>)

Easterly, W. (2013) 'The Role of Growth Slowdowns and Forecast Errors in Public Debt Crises, in Alesina, A. and Giavazzi, F. (editors), Fiscal Policy after the Financial Crisis, University of Chicago Press and National Bureau of Economic Research (<https://www.nber.org/books-and-chapters/fiscal-policy-after-financial-crisis/role-growth-slowdowns-and-forecast-errors-public-debt-crises>)

Flores, J.E., Furceri, D., Kothari, S., Ostry, J. (2022) 'Worse Than You Think: Public Debt Forecast Errors in Advanced and Developing Economies' Paper prepared for the Third Annual Conference of the European Fiscal Board, 'High Debt, Low Rates and Tail Events: Rules-Based Fiscal Frameworks Under Stress' Brussels, February 26, 2021 (<https://thedocs.worldbank.org/en/doc/4d5dcf2292cbc0249e55097196c34eac-0280032022/original/Debt-Forecast-Errors.pdf>)

Gechert, S. and Rannenberg, A. (2018) 'Which fiscal multipliers are regime dependent? A metaregression analysis' *Journal of Economic Surveys*, 32 (4), pp. 1160–1182

Gupta, S. (2021) 'Fiscal Adjustment and Growth in IMF-Supported Programs' Background paper No. BP/21-01/03. Independent Evaluation Office. IMF

Hadzi-Vaskov, M., Ricci, L.A., Werner, A.M. and Zamarripa, R. (2021) 'Patterns in IMF Growth Forecast Revisions: A Panel Study at Multiple Horizons' IMF Working Paper No. 2021/136

Hosny, A. (2020) 'Non-Resident Holdings of Domestic Debt in Nigeria: Internal or External Driven?' IMF Working Paper No. 2020/063 (<https://www.imf.org/en/Publications/WP/Issues/2020/05/22/Non-Resident-Holdings-of-Domestic-Debt-in-Nigeria-Internal-or-External-Driven-49443>)

IEO – Independent Evaluation Office, IMF (2014) 'IMF Forecasts: Process, Quality, and Country Perspectives' (<https://ieo.imf.org/en/our-work/Evaluations/Completed/2014-0318-imf-forecasts-process-quality-and-country-perspectives>)

IMF (2002) 'Assessing sustainability' <http://www.imf.org/external/np/pdr/sus/2002/eng/052802.pdf>

IMF (2003) 'Sustainability Assessments—Review of Application and Methodological Refinements' <http://www.imf.org/external/np/pdr/sustain/2003/061003.pdf>

IMF (2015) 'Public debt vulnerabilities in low-income countries: the evolving landscape' (<https://www.imf.org/external/np/pp/eng/2015/110215.pdf>)

IMF (2017) 'Review of the Debt Sustainability Framework In Low-Income Countries: Proposed Reforms' IMF Policy Paper

IMF (2018) 'Guidance Note on the Bank-Fund Debt Sustainability Framework for Low Income Countries'

IMF (2019) '2018 Review of Program Design and Conditionality' IMF Policy Paper No. 2019/012 (<https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/05/20/2018-Review-of-Program-Design-and-Conditionality-46910>)

IMF (2020) 'Eligibility to use the Fund's facilities for concessional financing, 2020' IMF policy paper no. 2020/016 (<https://www.imf.org/en/Publications/Policy-Papers/Issues/2020/03/16/Eligibility-to-Use-the-Fund-s-Facilities-for-Concessional-Financing-2020-49267>)

IMF (2021a) 'Questions and Answers on Sovereign Debt Issues' Updated as of 8 April 2021 (<https://www.imf.org/en/About/FAQ/sovereign-debt>)

IMF (2021b) 'Review of the debt sustainability framework for market access countries' IMF Policy Paper No. 2021/003 (<https://www.imf.org/en/Publications/Policy-Papers/Issues/2021/02/03/Review-of-The-Debt-Sustainability-Framework-For-Market-Access-Countries-50060>)

IMF (2023) 'Staff Guidance Note on Information Sharing in The Context of Sovereign Debt Restructurings' IMF Policy Paper No. 2023/027 (<https://www.imf.org/en/Publications/Policy-Papers/Issues/2023/06/23/Staff-Guidance-Note-on-Information-Sharing-in-The-Context-of-Sovereign-Debt-Restructurings-535203>).

IMF and IDA (2004) 'Debt Sustainability in Low-Income Countries—Proposal for an Operational Framework and Policy Implications' <https://www.imf.org/external/np/pdr/sustain/2004/020304.pdf>

Ismail, K., Perrelli, R., and Yang, J. (2020) 'Optimism Bias in Growth Forecasts— The Role of Planned Policy Adjustments' IMF Working Paper No. 2020/229

Kataryniuk, I. and Vallés, J. (2017) 'Fiscal Consolidation after the Great Recession: The Role of Composition' Working Paper No. 1515. Banco de España.

Koh, W.C. (2017) 'Fiscal multipliers: new evidence from a large panel of countries' Oxford Economic Papers 69(3): 569–590 (<https://ideas.repec.org/a/oup/oxecpp/v69y2017i3p569-590..html>).

Kose, M. A., P. Nagle, F. Ohnsorge, and N. Sugawara. 2020. Global Waves of Debt: Causes and Consequences. Washington, DC: World Bank.

Kraemer, M. and Volz, U. (2022) 'Integrating Nature into Debt Sustainability Analysis' Finance for Biodiversity Initiative. (<https://www.naturefinance.net/wp-content/uploads/2022/09/IntegratingNatureIntoDebtSustainabilityAnalysis.pdf>)

Larch, M., Claeys, P. and van der Wielen, W. (2022) 'The scarring effects of major economic downturns: The role of fiscal policy and government investment' ECONOMICS – WORKING PAPERS 2022/14. European Investment Bank (https://www.eib.org/attachments/lucalli/20220256_economics_working_paper_2022_14_en.pdf)

Maldonado, F. and Gallagher, K. (2022) 'Climate Change and IMF Debt Sustainability Analysis' Task Force on Climate, Development and the IMF (https://www.bu.edu/gdp/files/2022/02/TF_WP_005_FIN.pdf)

Mineshima, A., Poplawski-Ribeiro, M. and Weber, A. (2014) 'Size of fiscal multipliers'. In C. Cottarelli, P. Gerson and A. Senhadji (eds) Post-crisis fiscal policy, MIT Press (<https://doi.org/10.7551/mitpress/9780262027182.003.0013>).she

MoF - Ministry of Finance, Federal Democratic Republic of Ethiopia (2022) 'Annual public sector debt portfolio analysis for the year 2021/22' (https://www.mofed.gov.et/media/filer_public/82/9a/829a0973-048c-4347-8aa6-3fe368a1c024/1final_ethiopia_dpa_no_23_2022.pdf)

MoF – Ministry of Finance, Republic of Ghana (2021) 'Annual public debt report for the 2021 financial year'

Mustapha, S. (2014) 'What does the latest literature say on the strengths and weaknesses of the IMF's Debt Sustainability Analysis?' Economic and Private Sector Professional Evidence and Applied Knowledge Services

(https://assets.publishing.service.gov.uk/media/57a089ebe5274a27b2000311/Strengths_and_weaknesses_of_the_IMFs_Debt_Sustainability_Analysis_64.pdf)

Pinto, B. (2018) 'The distressing debt sustainability framework of the IMF and the World Bank' Commentary, 3 July 2018. Brookings Institution. (<https://www.brookings.edu/articles/the-distressing-debt-sustainability-framework-of-the-imf-and-world-bank/>)

Rehbein, K. (2022) 'A decade of rosy forecasts. How the IMF underestimated debt risks in the MENA Region' Friedrich-Ebert-Stiftung

Sheremirov, V. and Spirovska, S. (2019) Fiscal multipliers in advanced and developing countries: evidence from military spending. Working paper no. 19-3. Federal Reserve Bank of Boston (<https://ideas.repec.org/p/fip/fedbwp/19-3.html>).

UNESCAP (2023) 'Economic and Social Survey of Asia and the Pacific 2023 Rethinking Public Debt for the Sustainable Development Goals' (<https://www.unescap.org/kp/2023/economic-and-social-survey-asia-and-pacific-2023-rethinking-public-debt-sustainable>)

World Bank (2023) 'Debt' Updated as of 16 May 2023. (<https://ida.worldbank.org/en/financing/debt>)

Yang, W., Fidrmuc, J., and Ghosh, S. (2013) 'Macroeconomic Effects of Fiscal Adjustment: A Tale of two Approaches' CESifo Working Paper, No. 4401, Center for Economic Studies and ifo Institute (CESifo), Munich

About the author

Sherillyn Raga is a Research Fellow at ODI. Sherillyn has a decade of professional experience on policy-oriented research covering macroeconomics, financial integration, and trade and investment in Asian and African contexts. Prior joining ODI, she worked at the Philippine central bank, the International Monetary Fund and the Asian Development Bank.

New York Office

The office of Friedrich-Ebert-Stiftung (FES) in New York serves as the liaison for FES offices worldwide with the United Nations (UN) in New York and the international financial institutions (International Monetary Fund and World Bank) in Washington, D.C. The office addresses peace, justice and economic issues, working closely with academia, civil society, multilateral institutions and their Member State governments to convene multi-stakeholder debates. The formats of our work include international conferences, expert workshops and high-level meetings involving government representatives as well as published policy briefs and analytical studies. Our overarching mission is to bring a special focus to the perspectives of trade unions, women, and developing and emerging-market countries in an effort to forge consensus toward multilateral solutions to international and global challenges.

Jubilee USA Network

Jubilee USA Network is an interfaith alliance of 75 religious, labor, development, and climate organizations and more than 750 faith groups from the United States and around the globe. Jubilee USA addresses the structural causes of poverty, inequality and environmental challenges in our communities and countries. The network's efforts build an economy that serves, protects, and promotes the participation of the most vulnerable.

Acknowledgments

The author would like to thank Mark Flanagan, Annalisa Prizzon and Dirk Willem te Velde for valuable comments on the earlier drafts of the chapter. The chapter also benefited from feedback from experts during the 'Roundtable on Improving the Role of Debt Sustainability Analysis in the Global Financial Architecture' organised by the Initiative for Policy Dialogue, Jubilee USA Network and Friedrich-Ebert-Stiftung New York office on 22 September 2023. Comments are welcome to s.raga@odi.org.uk.

Imprint

Publisher:

Friedrich-Ebert-Stiftung e. V. | Godesberger Allee 149
| 53175 Bonn | Germany
Email: info@fes.de

Register no.: VR2392 Bonn Register of Associations
Bonn Local Court

Issuing Department:

Division for International Cooperation | Global and European Policy

Responsibility for content:

Dr. Michael Bröning |
Executive Director | Friedrich-Ebert-Stiftung |
New York Office | 747 Third Avenue, Suite 34D |
New York, NY 10017 | USA
Phone +1-212-687-0208
<https://ny.fes.de>

Contact/Order:

Christiane.Heun@fes.de

The views expressed in this publication are not necessarily those of the Friedrich-Ebert-Stiftung. Commercial use of media published by the Friedrich-Ebert-Stiftung (FES) is not permitted without the written consent of the FES. Publications by the Friedrich-Ebert-Stiftung may not be used for electioneering purposes.

© 2024

www.fes.de/bibliothek/fes-publikationen