Debt Sustainability in Low-Income Countries

DSA and the IMF/WB Debt Sustainability Framework (DSF)

May 27-29, 2024

Introduction

- Welcome to the Debt Sustainability Analysis (DSA) and Debt Sustainability Framework (DSF) Training
- Instructors: Julien Hartley
- Rules and guidelines for interactive participation (Mentimeter Questions and Quizzes, questions in chat, Test-in/out, Case Study)
- Case studies participation on Day 3
- Introduction participants

Ground Rules – Virtual Class

Our daily sessions are scheduled to last **3 hours** (10 minutes break included). Please be on time!

Please ensure you have your webcam ON during the sessions`; if not possible, switch it on when intervening ☺, it makes our sessions livelier!

Make sure to have a headphone connected to your computer, the sound will be better

Please mute yourself when not talking – but **do not hesitate to intervene** with questions, suggestions and contributions!

Keep next to you a good coffee and a bit of patience, sometimes technology is not perfect. And let colleagues and supervisor know you are on training!

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Getting to Know Each Other!

Mentimeter

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Pre-Course Questionnaire (Test-in)

Objectives

- Introduce the main principles and concepts of debt sustainability
- Provide a comprehensive overview of DSA and its role in assessing public debt dynamics
- Understand the implications of unsustainable debt and the potential need for debt default or restructuring
- Recognize the importance of policy adjustments and reforms to ensure sustainable debt levels
- Familiarize with the terminology used in DSA
- Grasp the theoretical concepts underlying debt dynamics in the LIC IMF/WB DSF/DSA
- Learn to interpret and analyze outputs in IMF/WB reports, including country case studies

Outline

- Day 1 Why is Debt Sustainability Important?
- Day 1 What are the Building Blocks of Debt Sustainability Analysis?
- Day 2 What is the IMF/WB Debt Sustainability Framework (DSF) and what is its Purpose?
- Day 3 The LIC DSF/DSA in Practice—Case Studies

Outline

Why is Debt Sustainability Important?

What are the Building Blocks of Debt Sustainability Analysis?

What is the IMF/WB Debt Sustainability Framework (DSF) and what is its Purpose?

The LIC DSF/DSA in Practice

Why do Governments Borrow?

Kenya: Central Government Financial Operations, 2019/20–2023/24

(in percent of GDP)

	2019/20	2020/21	2021/22	2022/23	2023/24
	Prel		Projected		
Revenue	17.3	17.0	16.8	17.6	18.6
Expenditure	25.1	25.7	24.3	23.5	22.9
Overall Balance	**(7.8)**	**(8.7)**	**(7.5)**	**(5.8)**	**(4.3)**
Financing	**7.8**	**6.7**	**6.3**	**5.3**	**3.9**
Net Foreign Financing	3.3	1.7	1.1	0.9	1.1
Project loans	1.5	2.2	2.2	2.2	2.2
Program loans	2.3				
IMF RCF	0.7				
Commercial borrowing	0.1	3.2	3.9	0.8	0.7
Standard Gauge Railway	0.4	0.1	0.0	0.0	0.0
Repayments	(1.0)	(3.8)	(5.0)	(2.0)	(1.8)
Net Domestic Financing	4.5	5.0	5.2	4.4	2.8
Financing gap		**(2.0)**	**(1.2)**	**(0.5)**	**(0.4)**
Potential additional sources					
IMF (EFF/ECF)		0.7	0.5	0.5	0.4
DSSI Relief		0.6			
World Bank		0.7	0.7		
Memo item:					
Primary Balance	(3.5)	(4.6)	(3.0)	(1.1)	0.2

Sources: Kenyan authorities and IMF staff calculations.

Why do Governments Borrow?

- Governments may run **budget deficits,** resulting in a financing gap
- The financing gap refers to the shortfall between expenditures and revenues
- Government can reduce the **financing gap** by improving the 'primary balance' through increased taxation or reduced spending
- Governments have the option to close the financing gap by **borrowing** from lenders
- Borrowing **increases the stock of debt**
- Borrowing leads to higher interest payments, contributing to an increase in the overall deficit

Is Public Borrowing Bad?

Is Public Borrowing Bad?

- As with most macroeconomics questions, the answer is ‘it depends’
- Borrowing to address **short-term financing challenges** caused by exogenous shocks can help governments avoid costly and difficult policy adjustments
- Borrowing allows for the **‘*smoothing*’ of expenditures** and can lead to higher early investment that increases total productive capacity in the long term
- Borrowing enables governments to implement temporary ***counter-cyclical policies***
- Borrowing for ***productive social and infrastructure investments*** can generate higher growth, revenue, and exports
- Such investments can also **enhance the capacity to repay debt** and help mitigate risks to debt sustainability

Is Public Borrowing Bad?

- **LICs often rely on external debt** to finance their **investment and development needs**
- We will see later that some of these concepts, such as productive investment are key components underlying the baseline scenario which is critical for a credible assessment of debt sustainability
- ‘Realism’ tools are used to assess macroeconomic assumptions that confirm investment in the baseline will generate growth and increase revenues

How do you Define Debt Sustainability?

How is Sustainability Defined?

Defining sustainability is **challenging**

It is easier from an academic or theoretical point of view…

…but more challenging from an operational point of view!

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How is Sustainability Defined? Solvency

- Sustainability can be assessed through **solvency**, liquidity, or through required policy adjustment

- **Solvency** compares the present value of a country's current and future assets and liabilities to determine if it can meet its current and future obligations

  - If the present value of total assets exceeds the present value of total liabilities, the country is considered 'solvent'

  - Conversely, if the present value of total assets is less than the present value of total liabilities, the country is considered 'insolvent'

- Public debt sustainability is equated with the **government's** ability to honor all its future obligations.

  - It depends on the government's present value of current and future expenditures not exceeding the present value of its current and future income

How is Sustainability Defined? Liquidity

- Sustainability can also be assessed through the lens of **liquidity,** which examines the **availability of liquid assets** to meet **maturing liabilities**
- It assesses whether a country has sufficient liquid assets and available financing to meet or **rollov**er its maturing liabilities.
  - If the value of liquid assets exceeds the maturing liabilities, the country or government is considered '**liquid**'
  - Conversely, if the value of liquid assets is insufficient to roll over maturing liabilities, the country or government is considered '**illiquid**'

Insolvency vs. Illiquidity

Difficult to distinguish between insolvency and illiquidity situations

Liquidity problems are often symptoms of underlying solvency problems: creditors refuse to roll over maturing debt because of solvency concerns

Liquidity problems may give rise to insolvency, by raising interest rates or pressuring the exchange rate

How is Sustainability Defined?

- Debt is considered sustainable if:
  - Projected debt ratios (debt-to-GDP) are stable or decline over time…
  - …and if debt ratios are relatively low
  - **Public debt is sustainable when the government is both solvent and liquid**
- Debt becomes unstainable if:
  - Debt ratios consistently increase
  - Debt ratios are relatively high

Which Indicators are Used in Debt Sustainability?

Ratios of debt stock to repayment capacity are solvency indicators of sustainability. They relate to debt burden. Reflect a government's capacity to repay financial obligations over an extended period of time

$$\frac{\text{Stock of debt}}{\text{GDP}}$$

$$\frac{\text{Stock of debt}}{\text{Exports}}$$

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Which Indicators are Used in Debt Sustainability?

Ratios of debt service are liquidity indicators of sustainability. They related to financing needs. Reflect a government's capacity to borrow funds in the short to medium term, at a reasonable cost to meet gross financing needs (including rollover of maturing financial obligations)

Debt Service / Exports

Debt Service / Revenues

Letter: Argentina faces painful adjustments if it is to end its debt crisis

From Danny Leipziger, Professor of International Business, George Washington University, Washington, DC, US

Labour unions and civil society groups protest against the IMF in Buenos Aires in October © Anadolu Agency via Getty Images

NOVEMBER 15 2021 0

The FT Big Read on Argentina's clash with the IMF (November 11) serves as a lesson in how all can get it wrong on bailouts — country officials, lenders and the IMF.

Defining Sustainability: The Economic Policy Angle

Sustainability can also be viewed from an economic policy perspective, focusing on the required policy adjustments to avoid default

Required **policy adjustment** refers to the degree to which governments need to adjust their current policies to avoid default

It assesses the level of policy change necessary to meet current and future payment obligations **without resorting to implausible large policy adjustments, debt renegotiation, or default.**

A country's public debt is considered sustainable if it can fulfill its current and future payment obligations without relying on unrealistic policy adjustments that are socially and politically unfeasible

Chad IMF Country Report, Dec. 2021:

*'Public debt is now classified as in distress, and the authorities decided to seek a restructuring of its external debt through the G20 Common Framework…meeting all financial obligations without a debt restructuring **would entail unrealistic adjustments and sacrifices** on social and development needs that are not compatible with the Fund's debt sustainability definition for LICs.'*

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How is Sustainability Defined? IMF/WB DSF

"In general, overall public debt and public external debt can be regarded as sustainable when there is a high likelihood that a country will be able to meet all its current and future financial obligations.

In practice, sustainability would imply that the debt level and debt service profile are such that the policies needed `for debt stabilization 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.

Thus, other factors not captured in the model, like feasibility issues, debt structure and holders, and impact on development goals, also need to be accounted for."1/

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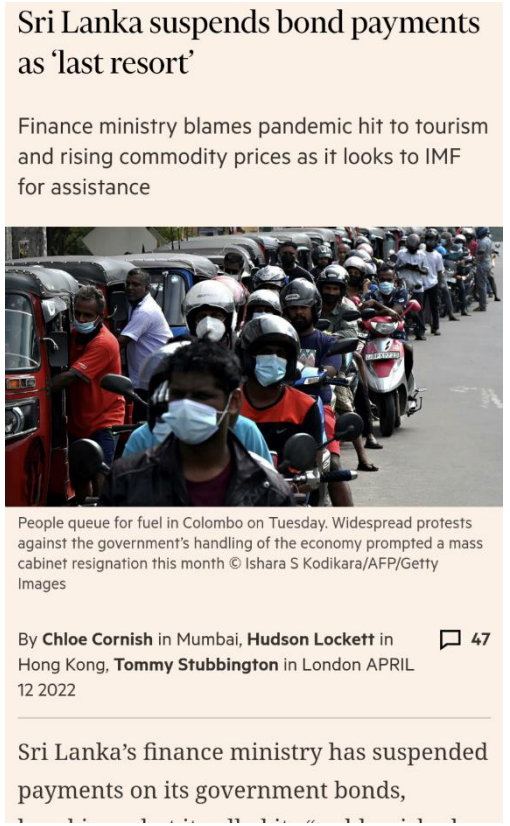
1/ 'Guidance Note On The Bank-Fund Debt Sustainability Framework For Low Income Countries' pp. 47, International Monetary Fund, February 2018

What if Debt is Unsustainable?

- Unsustainable debt means a country cannot fulfil its financial obligations without resorting to implausible policy adjustments or default
- Defaults can have severe consequences, including **loss of market access,** higher borrowing costs, threats to macroeconomic stability, and setbacks in development
- **Political instability** and economic or financial **mismanagement can lead to default**, even if a country is considered **solvent and liquid**
- The IMF takes a case-by-case approach, considering **debt sustainability analysis and** availability of the financing required for countries' long- term growth and development



Sri Lanka suspends bond payments as 'last resort'

Finance ministry blames pandemic hit to tourism and rising commodity prices as it looks to IMF for assistance

People queue for fuel in Colombo on Tuesday. Widespread protests against the government's handling of the economy prompted a mass cabinet resignation this month © Ishara S Kodikara/AFP/Getty Images

By **Chloe Cornish** in Mumbai, **Hudson Lockett** in Hong Kong, **Tommy Stubbington** in London APRIL 12 2022 47

Sri Lanka's finance ministry has suspended payments on its government bonds,

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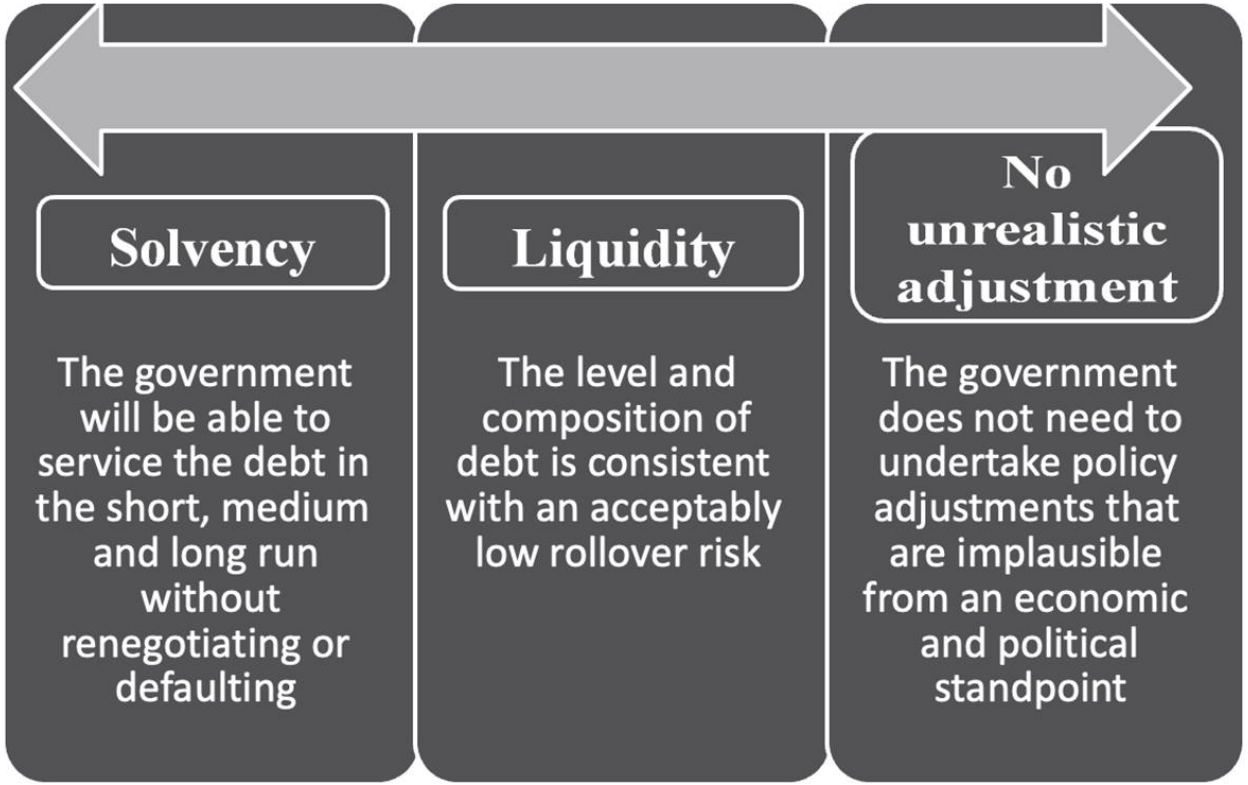
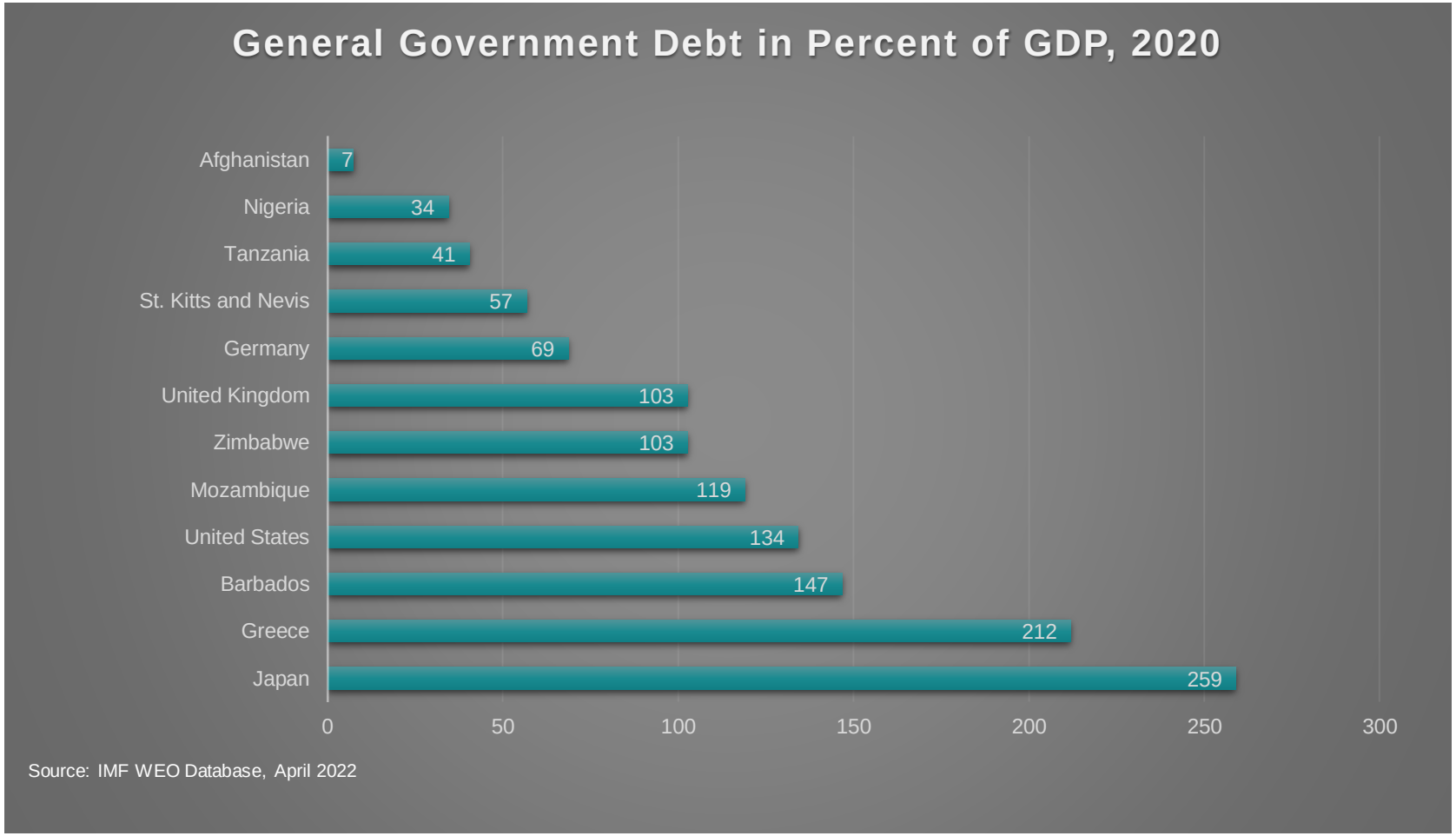
How is Sustainability Defined?—A Recap



What is the Correct Debt Level?



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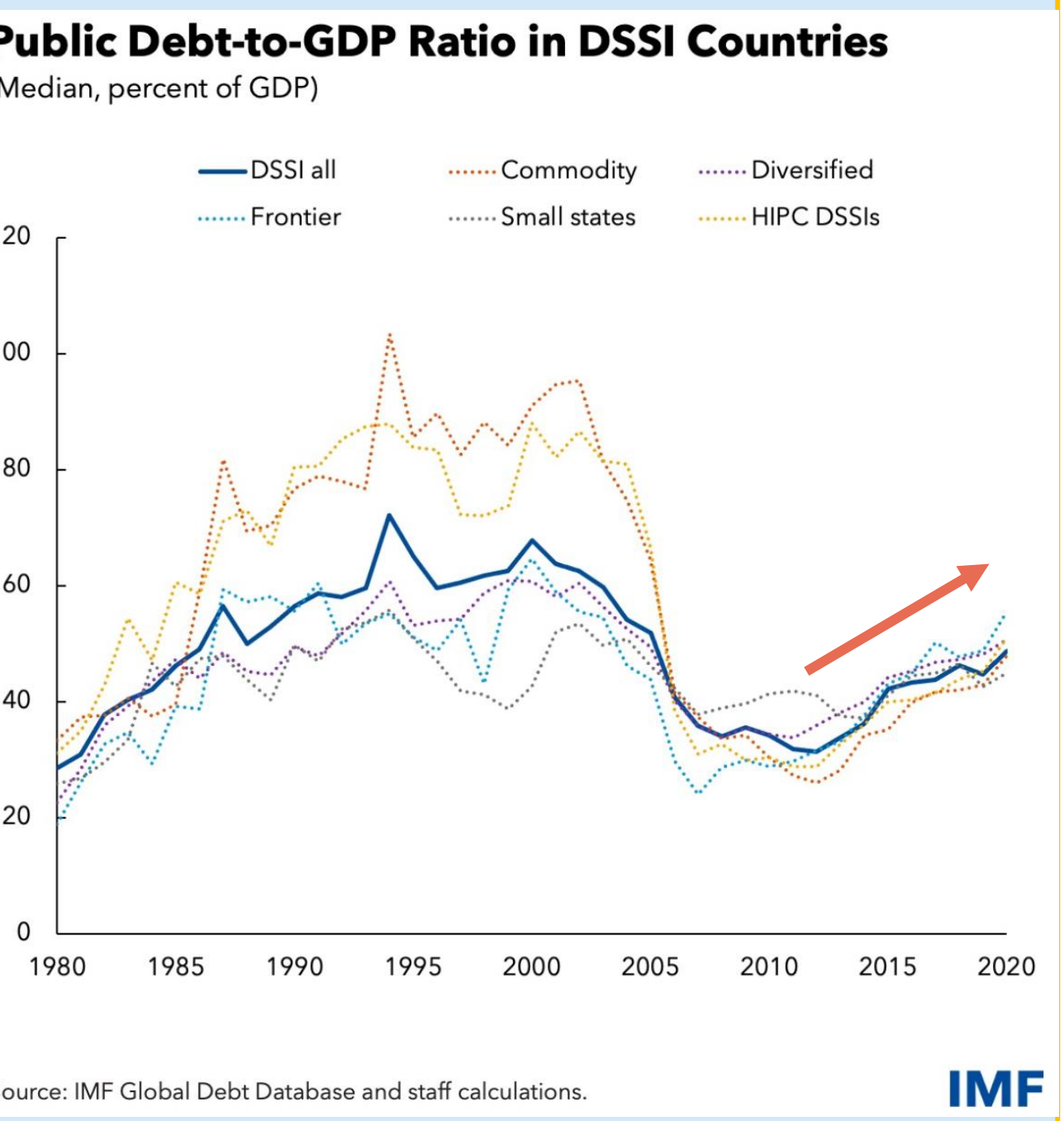
What is the Correct Debt Level?

- The correct debt level varies from country to country based on factors such as policies, institutional strengths, macroeconomic fundamentals, and shock-absorbing buffers
- Global economic environment can also influence a country's debt carrying capacity, borrowing costs and ability to generate revenue
- Low-income countries may face greater constraint due factors to higher interest rates and weaker public revenue, limited their capacity to service debt
- The IMF/WB DSF incorporates the concept of debt carrying capacity to assess debt sustainability in low-income countries



Debt Trends in LICs

- Debt levels and accumulation of arrears have improved compared to the 1990s, thanks to initiatives like the HIPC initiative
- However, debt levels have been **on the rise in the last decade** due to low interest rates, high investment needs, limited progress in domestic revenue mobilization, and constraints in public financial management capacity.
- Approximately 20 percent of HIPC/MDRI recipients now have higher public debt-to-GDP ratios compared to one year before the HIPC completion/MDRI point
- The recent COVID-19 crisis and the fallout of the war in Ukraine have **further aggravated** the debt **challenges**

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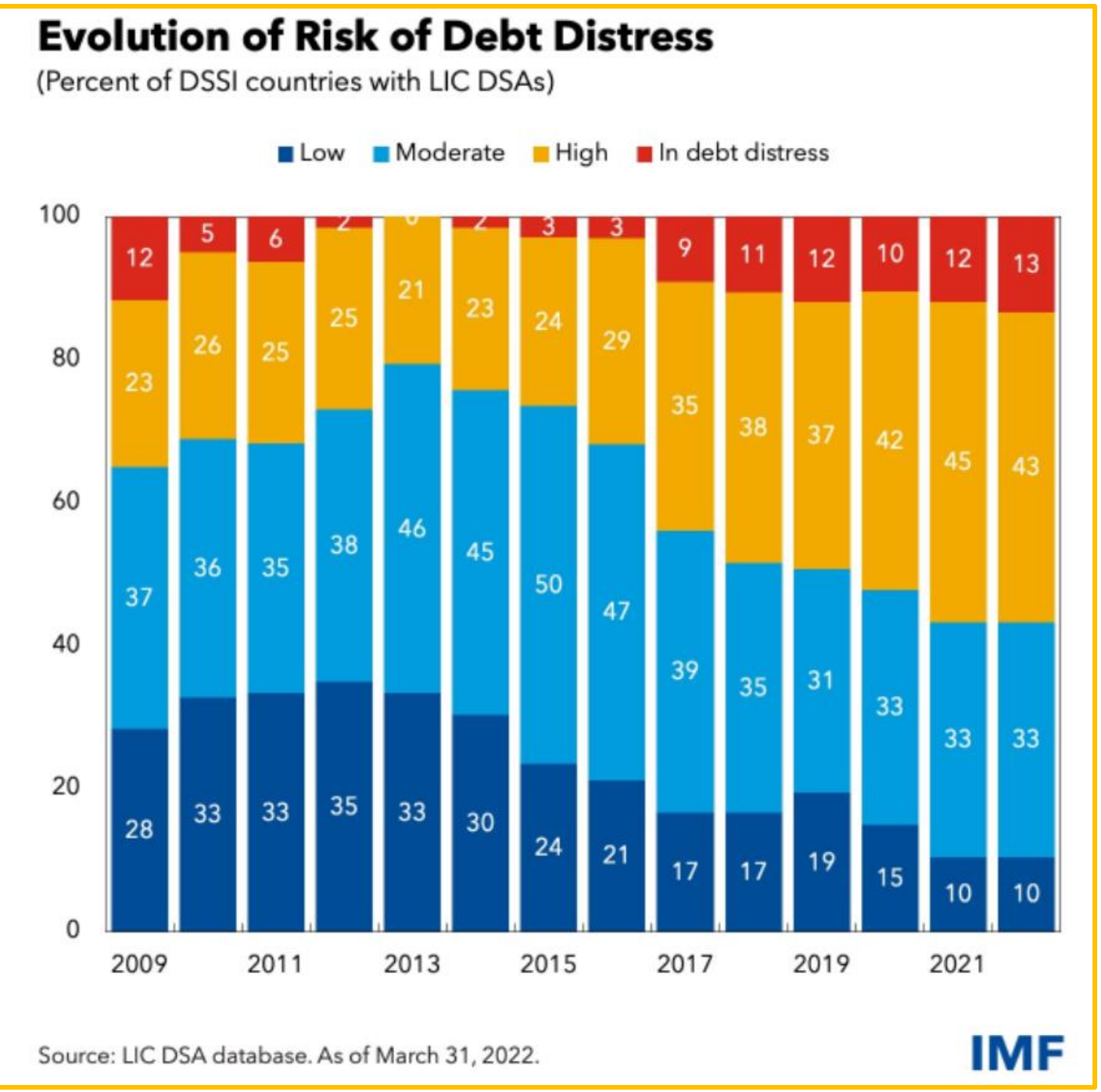

Rising Vulnerabilities in LICs

- **Debt vulnerabilities in LICs have increased i**n recent years,
- **Around 60 percent of low-income developing countries are now at high risk of or already in debt distress,** compared to less than 30 percent in 2015
- Low-income countries, which limited debt-carrying capacity, are experiencing a median debt level almost double that of 2013

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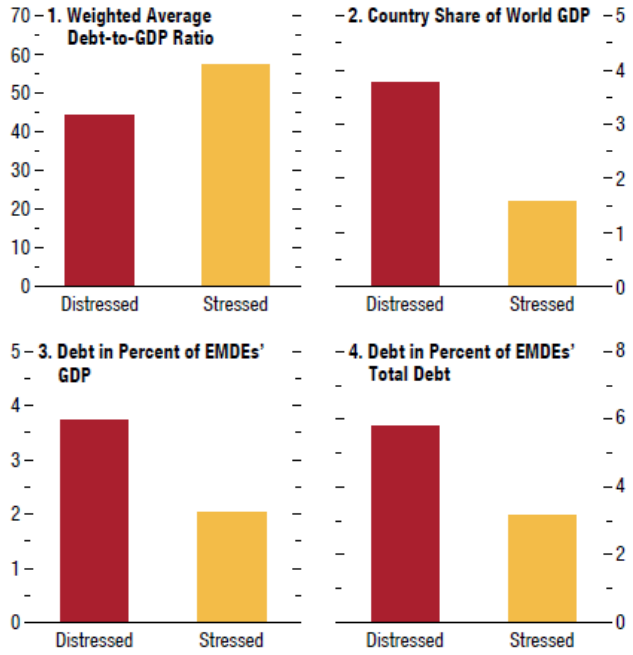
External Financial Conditions

- Rapid interest rate increases in advanced economies are tightening external financial conditions for developing economies
- Rising interest rates, coupled with a global slowdown and post-pandemic debt accumulation, are increasing pressures on national budgets, making it **more challenging to service or rollover debt**
- Countries facing mounting debt challenges may encounter debt distress, necessitating debt restructuring or reprofiling

Figure 1.27. Debt in Distress in Emerging Market and Developing Economies
(Percent)



Source: IMF staff calculations.

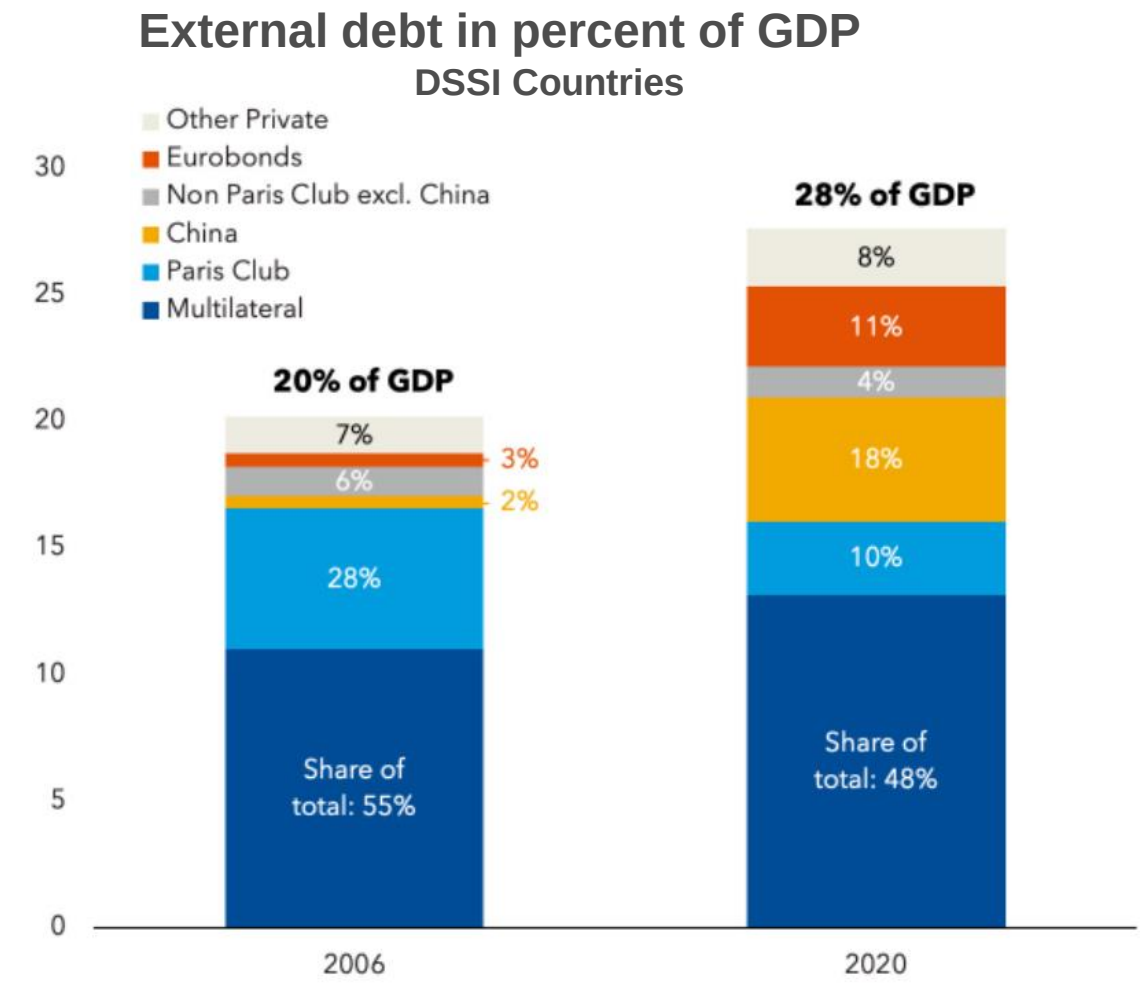
Will Debt Restructuring Be Needed?

- The LIC DSF aims to support low-income countries in achieving their development goals while **minimizing the risk of debt distress**
- **Debt restructuring is costly** for both debtors, creditors, and the international monetary and financial system
- It can have spillovers effect on various segments of the economy and potentially lead to contagion in other countries
- IMF financial support can only be provided for countries with sustainable debt
- In some cases, debt sustainability may be restored through sufficient access to concessional financing
- However, in other cases, debt **restructuring** may be necessary to reduce debt burdens or extend debt service over a longer period

Debt Restructuring Mechanisms

- The **Paris Club (PC)** is an informal group of official creditors that aims to find coordinated and sustainable solutions for debtor countries experiencing payment difficulties
- PC creditors provide debt treatments to debtor countries through rescheduling, which involves debt relief through postponement or, in the case of concessional rescheduling, reduction of debt service obligations during a defined period (flow treatment) or as of a set date (stock treatment)
- The **Common Framework** is an agreement between the G20 and PC countries to coordinate and cooperate on debt treatments for up to 73 low-income countries
  - Comparability of treatment: when a debtor country signs an MoU with participating creditors under the CF, it is required to seek from all its other official bilateral creditors and private creditors **a treatment at least as favorable as the one signed in the MoU**.

Where Are we Now?—New Creditors



Source: World Bank IDS, IMF WEO, and staff calculations.

IMF

- As borrowing levels have risen, there has been a notable change in the sources of external financing for countries
- One significant development is the increased role of **China** as a creditor, which has become a key player in providing financing to LICs
- Additionally, the role of **bondholders has also increased as a source of external financing for LICs**

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Chad—Restructuring, Common Framework

- Chad faced multiple challenges, including the pandemic, oil shock, and food crisis, which led to unsustainable public debt. The country sought support under the G20 Common Framework to restore debt sustainability.
- **Chad's** DSA revealed that its public debt was unsustainable, primarily due to a front-loaded repayment schedule to its largest private creditor
- In response, Chad requested support with an IMF ECF to support economic recovery and restore debt sustainability
- The approach included a multi-year fiscal consolidation program, donor support, and **debt restructuring** under the G20 **Common Framework**
- In Nov. 2022, Chad reached an agreement with external creditors, OCC (China, France, India, Saudi Arabia as well as private creditors) which will reduce the risk of debt distress

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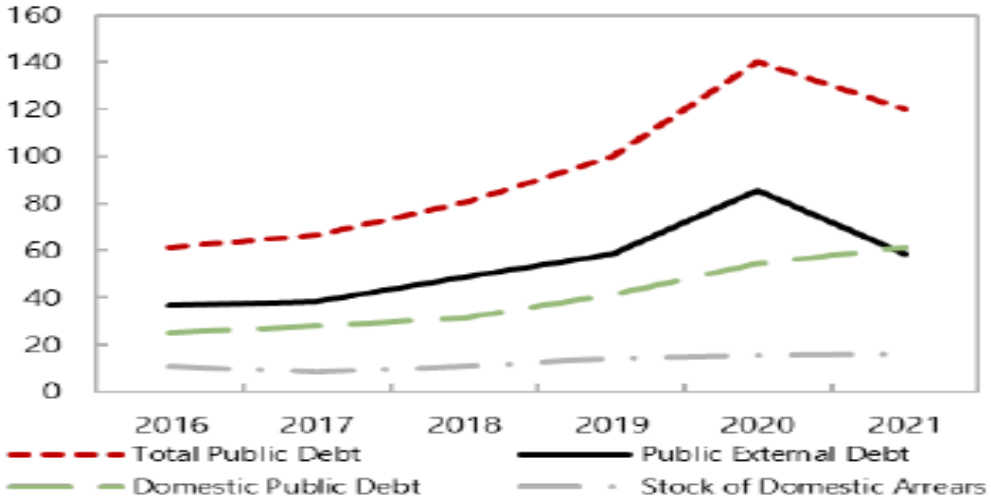
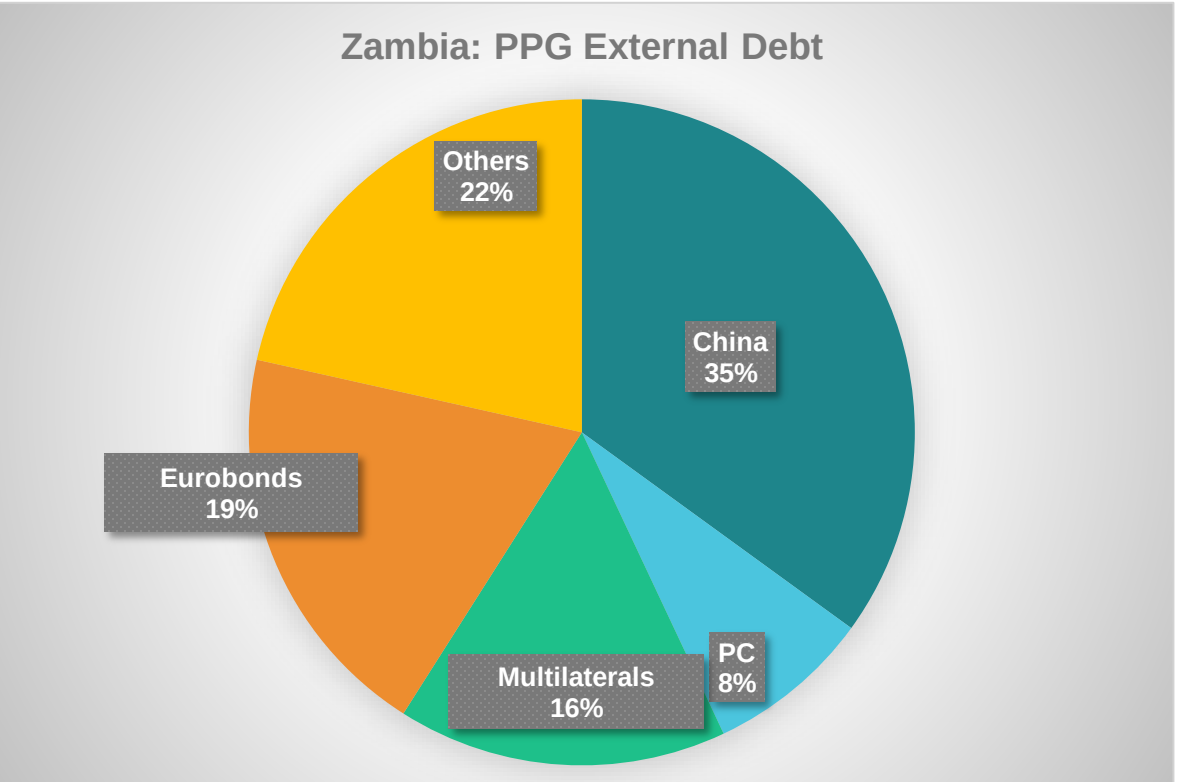
Public debt rose rapidly in recent years.





Zambia—Debt Restructuring: A 'Test Case'

- Zambia experienced large fiscal and external imbalances, compounded by an ambitious public investment program that failed to generate expected boost in growth and revenues
- External shocks, including the drought in 2019 and the pandemic, further intensified Zambia's challenges
- In November 2020, **Zambia entered debt distress** and defaulted on Eurobonds.
- **China emerged as the largest** creditor, followed by **Eurobond holders with significant involvement in the** copper mining sector and other sectors of the economy
- **Domestic debt represents** 50% of total debt
- China, together with France, co-chairs the Official Creditor Committee reflecting China's significant role as a creditor
- The debt restructuring process under CF adopted the PC's **comparability of treatment** standard for all creditors
- Deal represents a landmark for the IMF in addressing debt distress cases involving substantial borrowing from China

Quiz 1/4

Let’s go to Menti!

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Outline

Why is Debt Sustainability Important?

What are the Building Blocks of Debt Sustainability Analysis?

What is the IMF/WB Debt Sustainability Framework (DSF) and what is its Purpose?

The LIC DSF/DSA in Practice

What is a Debt Sustainability Analysis?

- A DSA combines various indicators and scenarios to assess the sustainability of a country's debt
- It considers both solvency and liquidity indicators, examining debt **trajectory, level of debt,** financing needs, under a baseline scenario, and potential risks

Present Value, grant element, discount rates, concessionality: what are they and why do they matter?

- In the LIC DSF, **present value (PV)** of debt is used as a measure of debt burden, considering the concessional nature of debt in many low-income countries
- **Concessional borrowing** offers longer grace periods, extended maturity, and lower interest rates compared to non-concessional debt
- As a result, when expressed in present value terms, concessional debt ‘appears’ smaller, thus lowering the debt-to-GDP ratio compared to nominal terms

Present value, grant element, discount rates, concessionality: what are they and why do they matter?

$$PV_t = \frac{DS_{t+1}}{(1+|r)} + \frac{DS_{t+2}}{(1+r)^2} + \frac{DS_{t+3}}{(1+r)^3} + \ldots + \frac{DS_{t+M}}{(1+r)^M}$$

In the LIC DSF the **present value (PV**) compares cash flows over time to assess the burden of debt:

- The PV of debt is calculated as the sum of all future debt service (DS) payments (principal and interest *I')* , discounted to the present using a specific **discount rate 'r' ,** set at 5% in the LIC DSF
- If the discount rate *r* is equal to the interest rate *I,* the PV is equal to the nominal value of debt
- If the interest rate *i* is lower than the discount rate r, the PV of the debt is lower than the nominal value, indicating that the loan has some degree of concessionality
- **The choice of discount rate is important, and t**he LIC DSF uses a uniform 5% discount rate

How Do Public Debt Dynamics Work?

- **New debt** is incurred when **total expenditure exceeds tax revenue**, resulting in a budget deficit
- The **change in government debt** between two years equals the **interest paid** on the stock of debt and the **primary deficit:**

$$Dt = (1 + i_t)D_{t-1} - PB_t$$

where Dt represents the government debt at time t, it is the interest rate, and PBt is the primary deficit

- Understanding debt evolution relative to a country's **capacity to country's capacity to service debt is crucial**
- Consistently , we can express the equation in relation to the country's **GDP**

How Do Public Debt Dynamics Work?

$$\Delta d = \mathrm{p} + (i - \pi)\mathrm{d}^{\mathrm{D}} + (i^{*} - \pi^{*})\mathrm{d}^{\mathrm{E}} - \mathrm{g}\cdot\mathrm{d} + (\pi^{*} + \Delta e - \pi)\mathrm{d}^{\mathrm{E}} - \sigma$$

Total change in public debt as a share of GDP

Primary deficit as a share of GDP

Real interest rate effect (on domestic and external public debt)

Real growth effect

Real exchange rate gains/losses on external debt

Asset changes and other identified debt-creating flows

Automatic debt dynamics

How Do Public Debt Dynamics Work?

$$\Delta d_t = \frac{primary\ deficit_t}{GDP_t} + (r_t - g_t)d_t.$$

- This is very important as it helps determine whether the current levels of taxes and public expenditure in a country can be sustained in the future, considering a specific constraint on the debt-to-GDP ratio
- **The difference between the interest rate and the growth rate of the economy plays a significant role in debt dynamics.**
- If the r>g, the debt ratio tends to increase over time, unless there is a sufficiently large primary surplus to offset the effect (know as the ‘snowball effect’)
- If the r < g, then there is room to run a primary deficit

External Debt Sustainability

- External debt sustainability is analogous to fiscal sustainability but focuses on the Balance of Payments (BoP) current account balance
- Similarly, to the budget balance, the change in external debt over time is determined by the current account balance
  - $Dt = (1 + i_t)D_{t-1} - AB_t$
- However, unlike the budget balance which the government had direct control over, the Current Account Balance is influenced by factors beyond the government's control
- The exchange rate plays a significant role in determining the CAB

What are the drivers of the debt-to-GDP ratio?

- **Several key macroeconomic variables determine** debt sustainability, including the Primary Balance (the difference between government revenue and non-interest expenditure), and the non-interest Current Account Balance
- The initial level of debt, the rate of economic growth, and the interest rate are also drivers.
- **Automatic debt dynamics,** the interest rate, the real growth rate, the real exchange rate contribute to changes in the public and external debt as a share of GDP
- **Achieving a debt stabilizing primary balance or a non-interest current account deficit is essential for maintaining debt sustainability**
- **Residuals** (below the line operations, different definition for stock of debt and fiscal balance)

Public Debt Dynamics

The decomposition of debt evolution into its driving factors based on debt dynamics equation are displayed in the output table below

Table 2. Chad: Public Sector Debt Sustainability Framework, Baseline Scenario, 2015-2038

(In percent of GDP, unless otherwise indicated)

	Actual			Projections							
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2028	2038
Public sector debt 1/	**70.4**	**72.9**	**74.2**	**70.2**	**66.0**	**62.7**	**60.3**	**57.9**	**55.4**	**48.9**	**39.3**
of which: external debt	**44.9**	**49.2**	**49.3**	**51.0**	**49.1**	**46.9**	**45.4**	**43.2**	**41.8**	**34.4**	**29.0**
Change in public sector debt	12.4	2.5	1.3	-4.0	-4.2	-3.3	-2.4	-2.4	-2.5	-1.3	-1.0
Identified debt-creating flows	**11.0**	**1.5**	**0.1**	**-3.5**	**-3.0**	**-2.0**	**-0.9**	**-0.9**	**-1.2**	**-0.6**	**-0.6**
Primary deficit	**3.9**	**0.4**	**2.4**	**-0.2**	**-2.2**	**-2.2**	**-2.0**	**-1.8**	**-1.6**	**-0.3**	**-0.3**
Revenue and grants	18.4	19.6	17.3	18.9	18.6	19.0	19.1	18.9	18.7	17.8	17.2
of which: grants	0.7	2.0	0.7	0.7	0.5	0.3	0.2	0.2	0.1	0.0	0.0
Primary (noninterest) expenditure	22.3	20.0	19.7	18.7	16.5	16.8	17.1	17.1	17.2	17.5	17.0
Automatic debt dynamics	**7.2**	**1.1**	**-2.3**	**-2.2**	**-0.9**	**0.2**	**1.1**	**0.9**	**0.4**	**-0.3**	**-0.3**
Contribution from interest rate/growth differential	-0.4	-0.2	-0.1	-2.1	-1.2	0.3	1.2	1.0	0.4	-0.3	-0.3
of which: contribution from average real interest rate	1.8	2.4	2.3	2.0	4.5	4.0	4.3	4.0	3.4	1.9	1.5
of which: contribution from real GDP growth	-2.2	-2.6	-2.4	-4.1	-5.7	-3.7	-3.0	-3.0	-2.9	-2.1	-1.8
Contribution from real exchange rate depreciation	7.6	1.2	-2.2	...	...	...	...	...	...	...	...
Other identified debt-creating flows	**0.0**	**0.0**	**0.0**	**-1.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Privatization receipts (negative)	0.0	0.0	0.0	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recognition of contingent liabilities (e.g., bank recapitalization)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Debt relief (HIPC and other)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other debt creating or reducing flow (please specify)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Residual	**1.3**	**1.0**	**1.2**	**-0.6**	**-0.8**	**-1.4**	**-1.6**	**-1.6**	**-1.4**	**-0.8**	**-0.4**
Sustainability indicators											
PV of public debt-to-GDP ratio 2/	**...**	**...**	**71.0**	**67.3**	**62.9**	**59.4**	**56.9**	**54.8**	**52.7**	**46.2**	**38.2**
PV of public debt-to-revenue and grants ratio	**...**	**...**	**411.8**	**357.2**	**337.6**	**313.3**	**298.9**	**290.3**	**281.0**	**259.5**	**221.8**
Debt service-to-revenue and grants ratio 3/	**93.3**	**114.6**	**127.1**	**126.4**	**89.9**	**81.9**	**81.1**	**88.1**	**81.1**	**84.4**	**51.4**
Gross financing need 4/	21.0	22.8	24.4	22.5	14.6	13.3	13.5	14.9	13.6	14.7	8.6

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External Debt Dynamics

Table 1. Madagascar: External Debt Sustainability Framework, Baseline Scenario

(In percent of GDP; unless otherwise indicated)

	Actual			Projections								Average 8/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical	Projections
External debt (nominal) 1/	**50.2**	**69.4**	**65.4**	**73.3**	**73.0**	**69.4**	**66.1**	**63.9**	**61.7**	**57.4**	**54.3**	**45.0**	**63.5**
of which: public and publicly guaranteed (PPG)	**25.7**	**26.4**	**26.6**	**32.0**	**34.7**	**36.1**	**37.3**	**38.1**	**38.6**	**43.2**	**47.9**	**24.6**	**38.4**
Change in external debt	-0.8	19.2	-3.9	7.8	-0.3	-3.6	-3.3	-2.3	-2.2	-0.3	-1.0		
Identified net debt-creating flows	**-7.4**	**-7.1**	**-2.9**	**7.7**	**0.5**	**-1.4**	**-1.9**	**-2.2**	**-2.2**	**-1.2**	**-0.6**	**-2.2**	**-0.7**
Non-interest current account deficit	**0.0**	**-1.2**	**1.7**	**6.1**	**4.5**	**3.9**	**3.8**	**3.4**	**3.2**	**3.6**	**3.6**	**2.9**	**3.8**
Deficit in balance of goods and services	3.3	3.4	4.6	9.1	8.8	6.9	6.9	6.6	6.6	6.7	6.9	**6.0**	**7.0**
Exports	30.9	31.2	27.8	18.3	23.1	26.3	27.6	28.0	28.6	26.8	24.3		
Imports	34.2	34.6	32.4	27.4	31.8	33.2	34.5	34.6	35.2	33.6	31.3		
Net current transfers (negative = inflow)	-5.6	-6.9	-5.5	-5.5	-5.3	-5.1	-5.1	-5.0	-5.1	-4.6	-4.2	**-5.5**	**-5.0**
of which: official	-2.5	-2.6	-3.0	-3.1	-2.3	-1.8	-1.3	-0.9	-0.6	-0.1	0.0		
Other current account flows (negative = net inflow)	2.3	2.3	2.6	2.5	1.1	2.1	2.0	1.8	1.7	1.5	0.9	**2.5**	**1.7**
Net FDI (negative = inflow)	**-2.7**	**-3.6**	**-2.6**	**-1.8**	**-2.2**	**-2.4**	**-2.8**	**-2.9**	**-3.0**	**-3.1**	**-3.2**	**-4.0**	**-2.8**
Endogenous debt dynamics 2/	**-4.8**	**-2.4**	**-2.1**	**3.4**	**-1.8**	**-2.9**	**-2.9**	**-2.6**	**-2.4**	**-1.7**	**-1.0**		
Contribution from nominal interest rate	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	1.0	1.4		
Contribution from real GDP growth	-1.8	-1.5	-2.9	2.9	-2.2	-3.4	-3.4	-3.2	-3.0	-2.7	-2.4		
Contribution from price and exchange rate changes	-3.3	-1.4	0.3	...	...	...	...	...	...	...	...		
Residual 3/	**6.6**	**26.3**	**-1.0**	**0.1**	**-0.8**	**-2.1**	**-1.4**	**-0.1**	**0.0**	**0.9**	**-0.4**	**5.9**	**0.0**
of which: exceptional financing	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	**...**	**...**	**15.6**	**19.2**	**21.0**	**22.0**	**23.0**	**23.7**	**24.4**	**28.6**	**34.5**		
PV of PPG external debt-to-exports ratio	**...**	**...**	**56.1**	**104.4**	**91.1**	**83.7**	**83.3**	**84.8**	**85.3**	**106.8**	**141.9**		
PPG debt service-to-exports ratio	**5.6**	**2.9**	**2.8**	**4.4**	**3.9**	**4.2**	**4.9**	**4.9**	**4.9**	**7.3**	**10.6**		
PPG debt service-to-revenue ratio	**16.7**	**8.9**	**7.3**	**8.9**	**8.7**	**9.8**	**11.0**	**10.8**	**10.6**	**14.1**	**17.4**		
Gross external financing need (Million of U.S. dollars)	12.5	-488.0	699.5	1253.2	787.7	1168.5	1182.2	842.0	817.1	1149.6	2171.7		
Key macroeconomic assumptions													
Real GDP growth (in percent)	3.9	3.2	4.4	-4.2	3.2	5.0	5.4	5.2	5.0	5.0	4.6	**3.0**	**4.1**
GDP deflator in US dollar terms (change in percent)	7.0	2.8	-0.5	-0.5	3.2	3.1	2.7	1.9	1.7	1.6	1.7	**1.4**	**1.8**
Effective interest rate (percent) 4/	0.8	1.1	0.7	0.7	0.6	0.7	0.8	1.0	1.1	1.8	2.7	**1.0**	**1.1**
Growth of exports of G&S (US dollar terms, in percent)	21.6	7.0	-7.2	-37.2	33.9	23.7	13.3	8.7	9.1	5.1	5.6	**8.0**	**7.1**
Growth of imports of G&S (US dollar terms, in percent)	26.2	7.1	-2.5	-19.4	23.7	13.0	12.3	7.5	8.7	5.9	6.6	**2.5**	**6.7**
Grant element of new public sector borrowing (in percent)	...	...	...	37.7	42.9	41.4	39.5	39.1	38.4	34.7	31.4	...	**37.9**
Government revenues (excluding grants, in percent of GDP)	10.3	10.4	10.5	9.2	10.3	11.4	12.2	12.8	13.3	14.0	14.8	**9.3**	**12.6**
Aid flows (in Million of US dollars) 5/	588.5	615.5	733.4	436.7	853.1	889.3	903.7	846.2	831.4	1078.7	1412.8		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	3.4	4.5	3.8	3.2	2.6	2.2	1.8	1.3	...	**2.7**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	55.4	60.0	57.7	52.4	49.7	47.0	35.7	31.4	...	**46.8**
Nominal GDP (Million of US dollars)	13,176	13,974	14,519	13,837	14,746	15,972	17,283	18,524	19,776	27,295	51,511		
Nominal dollar GDP growth	11.2	6.1	3.9	-4.7	6.6	8.3	8.2	7.2	6.8	6.7	6.4	**4.4**	**6.0**
Memorandum items:													
PV of external debt 7/	...	...	54.5	60.4	59.3	55.4	51.8	49.5	47.5	42.8	40.9		
In percent of exports	...	...	195.6	329.4	257.1	210.2	187.7	176.9	165.9	159.5	168.1		
Total external debt service-to-exports ratio	9.0	4.1	20.3	25.9	13.2	22.2	21.1	14.6	13.8	13.8	15.6		
PV of PPG external debt (in Million of US dollars)			2267.8	2650.8	3095.4	3521.0	3970.2	4398.7	4824.2	7816.0	17784.3		
(PVt-PVt-1)/GDPt-1 (in percent)				2.6	3.2	2.9	2.8	2.5	2.3	2.8	2.1		
Non-interest current account deficit that stabilizes debt ratio	0.9	-20.4	5.7	-1.7	4.8	7.5	7.1	5.6	5.3	3.9	4.6		

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Outline

Why is Debt Sustainability Important?

What are the Building Blocks of Debt Sustainability Analysis?

What is the IMF/WB Debt Sustainability Framework (DSF) and what is its Purpose?

The LIC DSF/DSA in Practice

Evolution of the LIC Debt Sustainability Framework (DSF)

The LIC Debt Sustainability Framework was introduced in 2005 as a tool to assess the debt sustainability of LICs

Significant revisions were made to the framework in 2012 and again in 2018 to enhance its effectiveness and adapt to changing circumstances

One notable trend in LICs is the **increasing reliance on domestic and non-concessional external borrowing, including borrowing from i**nternational bond markets to finance investment

This shift in borrowing patterns exposes LICs to a wider set of vulnerabilities, including market volatility

Understanding the DSF DSA: Assessing Debt Sustainability Risks

The IMF/WB DSF DSA is a risk-based assessment tool used to establish proper policy adjustments to avoid potential defaults

It is designed and monitored by the IMF and WB to assess public debt sustainability in LICs

The DSF DSA relies on macroeconomic projections and compares forecast debt indicators relative to risk thresholds

Overview of the LIC DSF

- The LIC DSF is the **analytical framework** for assessing **risks to debt sustainability** in LICs
- It ensures **comparability** across countries, promoting consistency and standardized analysis of debt risks
- The **objective** of the LIC DSF is to ensure the provision of **resources** to LICs while **minimizing the risk of debt distress** and supporting progress towards **achieving their development goals**
- **It guides borrowing decisions** of low-income countries, aligning their funding need with their current and prospective debt-servicing capacity, tailored to their specific circumstances
- It serves as an "**early warning system,**" identifying potential **risks of debt distress, enabling timely** preventive action

Unique Features of the LIC DSF

- The LIC DSF is designed for countries reliant on **concessional financing**
- **It incorporates long-term projections** to capture long maturities and grace periods associated with concessional loans and investment returns
- It uses 10 years of historical data and a 20-year forecast period, recognizing the significant use of concessional financing and employing the standard OECD 5% discount rate
- **It includes an explicit risk rating,** with important **operational and lending implications** for multilateral institutions and other creditors
- The frequency of assessments is undertaken annually or in specific circumstances:
  - Request for IMF Financing
  - Modification or waiver of borrowing related conditionality
  - Setting or revising WB sustainable development financing

Who is the Audience of the DSF/DSA?

IMF/WB:

- Use the DSF/DSA to inform their own macroeconomic analysis and the **policy advice** they provide to governments
- Risk assessments inform the IMF's debt limits policy (DLP) and the WB Sustainable Development Finance Policy

Borrowers:

- Strengthen fiscal policy, inform borrowing decisions, and improve debt management

Creditors:

- Promote responsible lending

Policy Implications: Linking the LIC DSF with IMF/WB Policies and Facilities

Borrowing ceilings *aim at supporting countries* ***meet their financing needs*** *consistent with debt sustainability*

IMF

- DSF results inform the **IMF debt limits policy (DLP**), which sets **limits on debt accumulation** with Fund-supported programs
- The DLP adopts a risk-based approach, aligning **conditionality with debt vulnerabilities** identified through the DSA

WB

- DSF serves as an input for the **World Bank Sustainable Development Finance Policy (SDFP),** which sets nominal limits on non-concessional external PPG debt
- **Different risk categories** correspond to specific debt ceilings to prevent risk downgrade and ensure prudent debt management

Determining Risk Ratings: Assessing External Debt Risk

- The DSF focuses on assessing the risk of **external** public and publicly guaranteed debt debt (PPG)
- **Debt-carrying capacity is computed to establish** the corresponding debt burden threshold for selected indicators
- **Risks are determined through a mechanical external rating process, which considers the** number and types of breaches of established thresholds.
- Ratings are classified as low, moderate, high, or in debt distress
- Thresholds represent bounds above which the risk of debt distress is considered elevated
- Risk ratings incorporate both baseline breaches and shock breaches
- Mechanical risk ratings are combined with judgement to assign an overall risk rating for debt distress likelihood.
- The overall risk rating serves as supplementary information for decision-making and policy adjustments.

Quiz 3/4

Let’s go to Menti!

Mentimeter

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Outline

- Why is Debt Sustainability Important?
- What are the Building Blocks of Debt Sustainability Analysis?
- What is the IMF/WB Debt Sustainability Framework (DSF) and what is its Purpose?
- The LIC DSF/DSA in Practice

Debt Coverage

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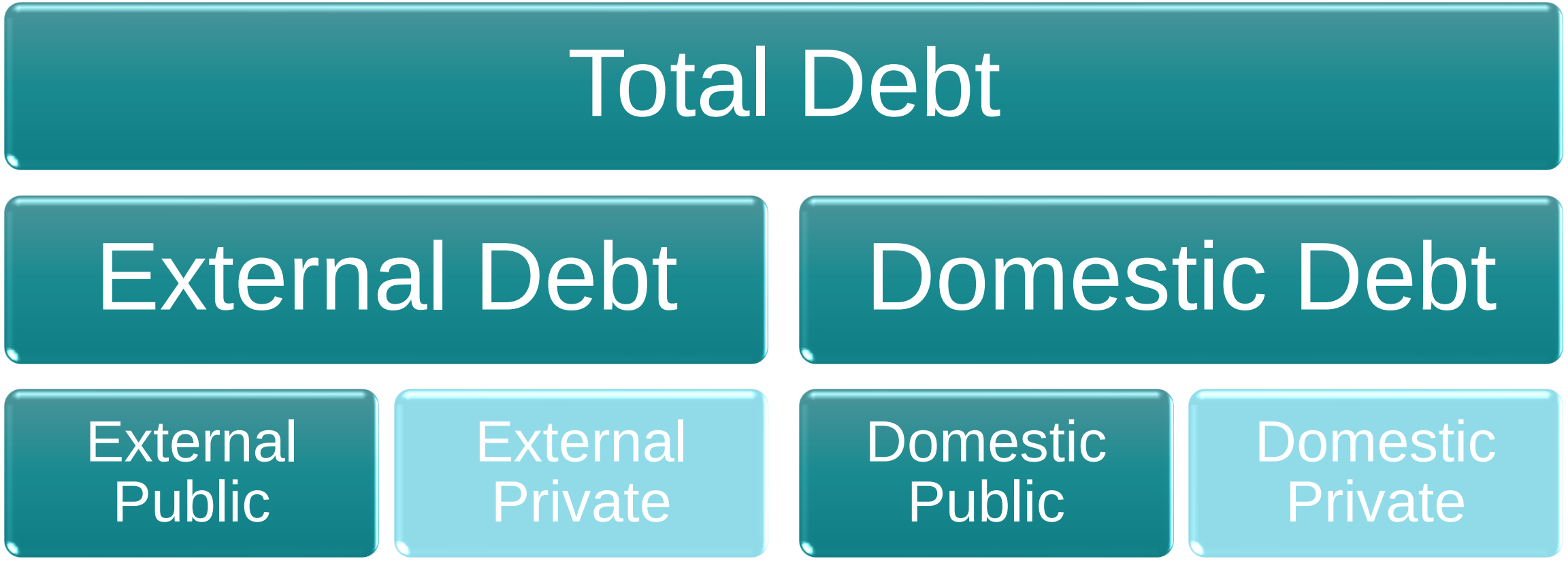
What Makes Up the Debt Coverage?

Public debt has driven most debt crises in developing countries



What Makes Up the Debt Coverage?

The DSA should be based on broadest definition/coverage of public sector debt

Broad public debt coverage is important to arrive at an assessment of risk of debt distress that is comparable across countries

Vital to assess risk of debt distress, comprises debt from several different sub-sectors

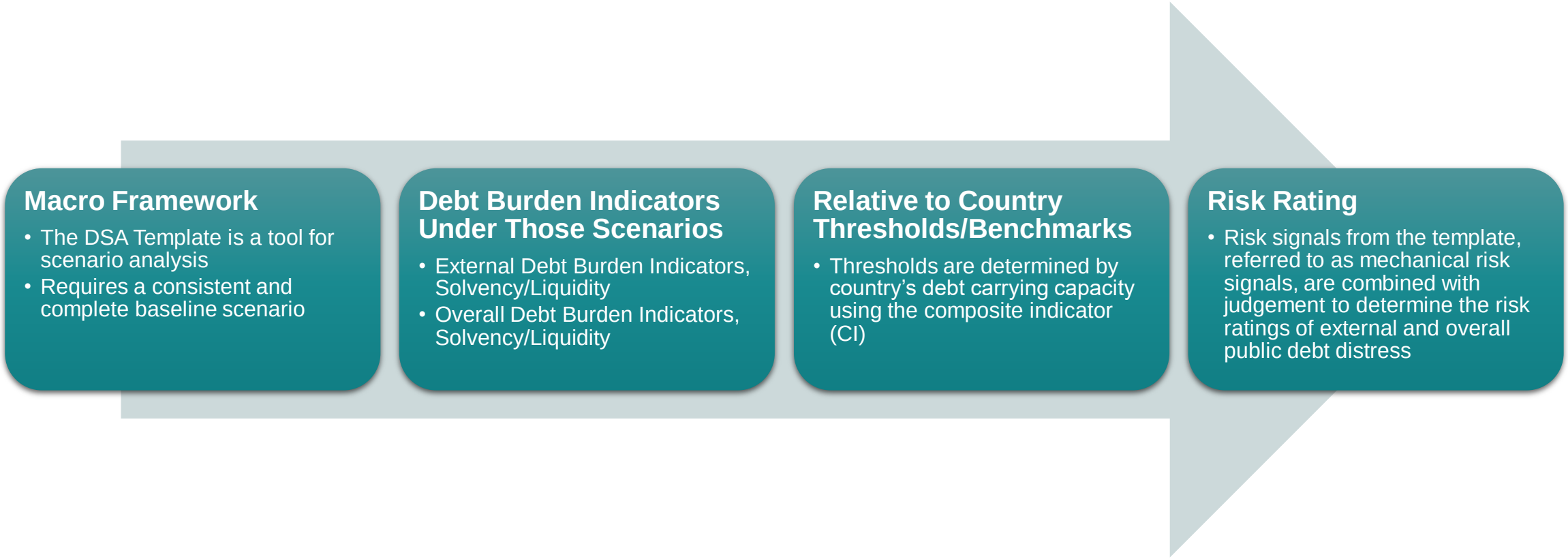
A narrow definition of public debt could result in **unexpected risks** from sources outside the defined public sector perimeter!

For instance, if a loss-making state-owned enterprise is not able to service its debt, the burden ultimately falls on the central government because such debt is *publicly guaranteed*, leading to unexpected weakening in a country's debt sustainability

A narrow public coverage in the LIC DSF will **automatically** trigger an additional contingent liability stress test, which evaluates the risks created by the omitted sectors

How Does the LIC DSF Template Work?

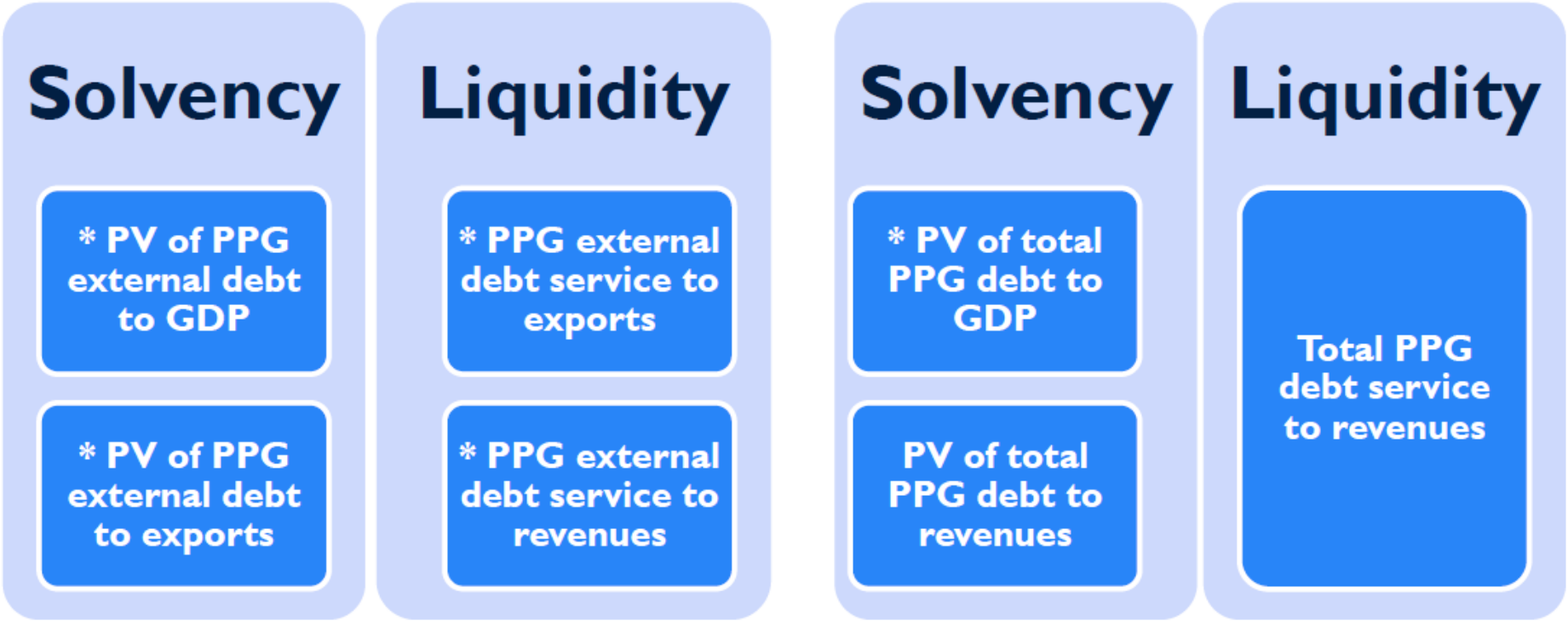
How Does the LIC DSF Template Work?



Why is an Accurate 'Baseline' Scenario Important?

- DSA template is a tool for **scenario analysis**
- Baseline is most **likely scenario** given present information and should be balanced relative to risks
- Should be realistic, consistent with authorities' policies, complete and mutually consistent
- Historical (10 years) and projected (20 years)
- DSAs are only as good as their underlying assumptions!

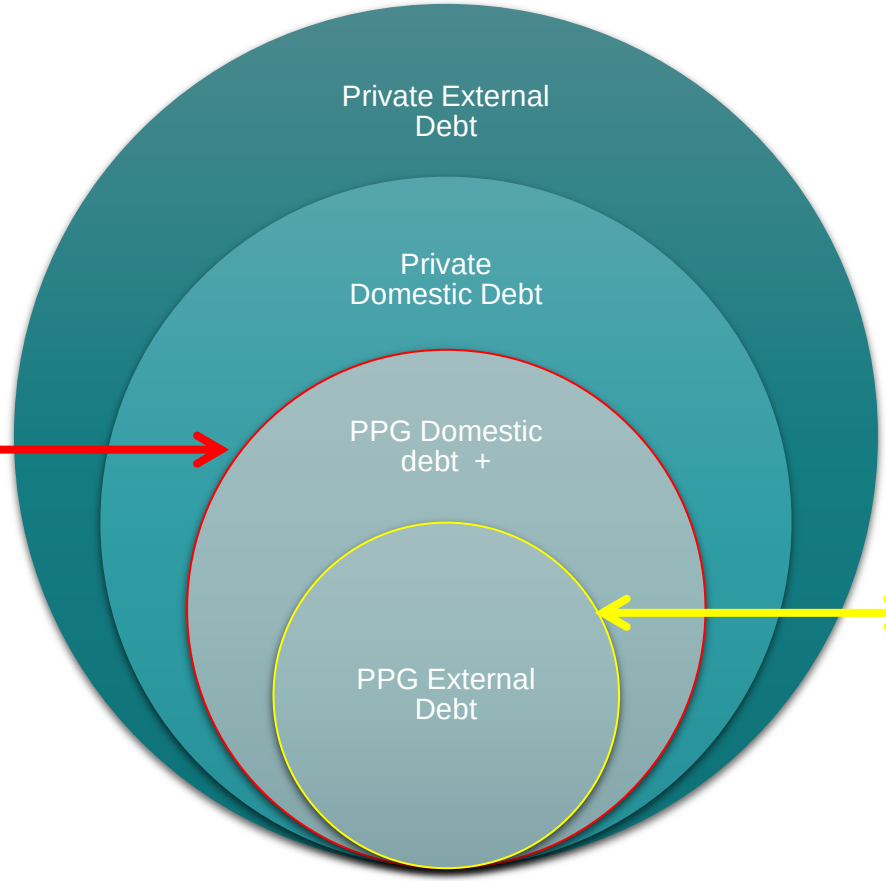
How Does the LIC DSF Template Work?



What Components Make Up the LIC DSF Template?

The LIC DSF has two components: an **external DSA and a public DSA**
For each, the Framework generates **mechanical risk** signal **based on PPG debt**

Assessment of overall risk of **Public Debt** Distress



External Risk Rating

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What are the Realism Tools for Assessing Debt Sustainability?

Should we question the Baseline?

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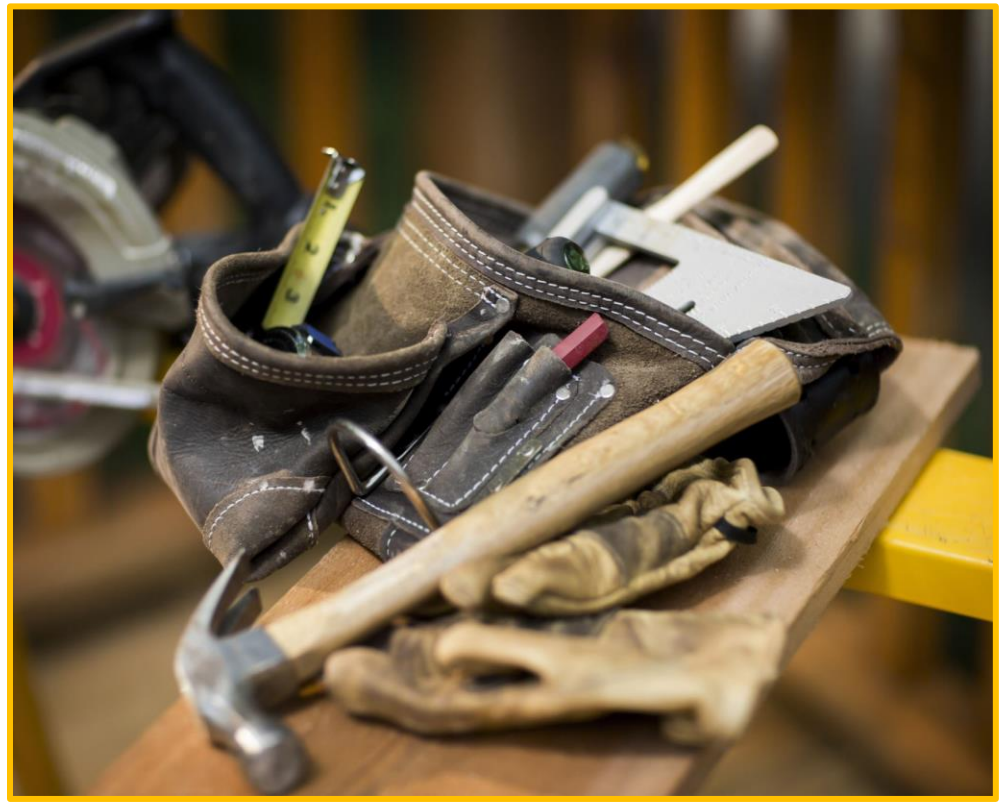
Realism tools, should we question the baseline?

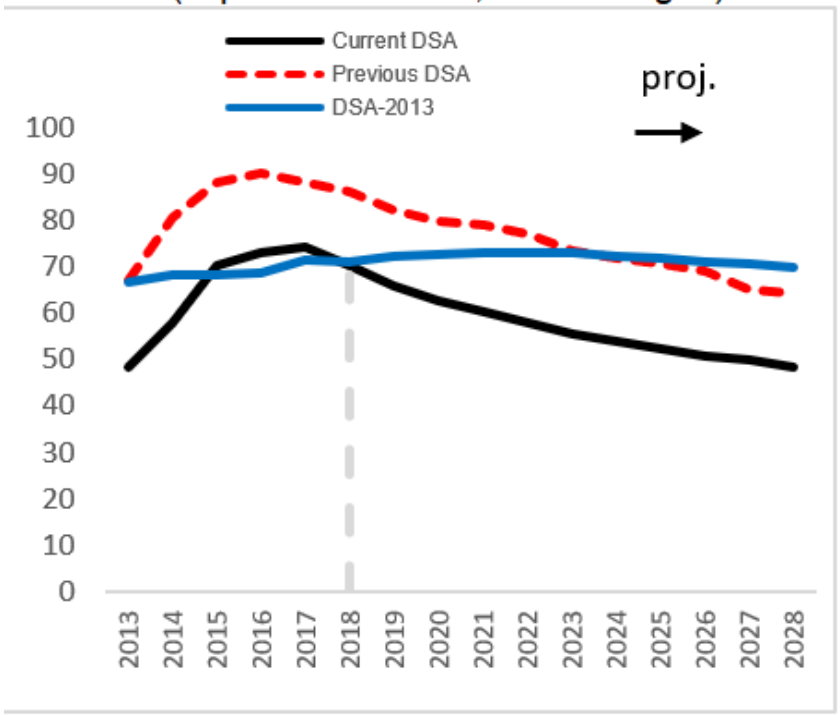


- Realism tools provide a point of comparison for forecasts, drawing on the country's history, cross-country experiences, and economic theory relationships
- They are crucial for a **credible assessment** of debt sustainability
- Assumptions in the baseline scenario must be realistic and LIC DSF includes 4 realism tools that examine different aspect of the macroeconomic framework
- Realism tools **scrutinize past and future drivers of debt dynamics**, planned fiscal adjustments, the potential impact of fiscal adjustment on growth, as well as the public investment-growth nexus
- The assessment considers the evolution of projections for external and public debt-to-GDP ratios over DSA vintages (from one year and five years ago)

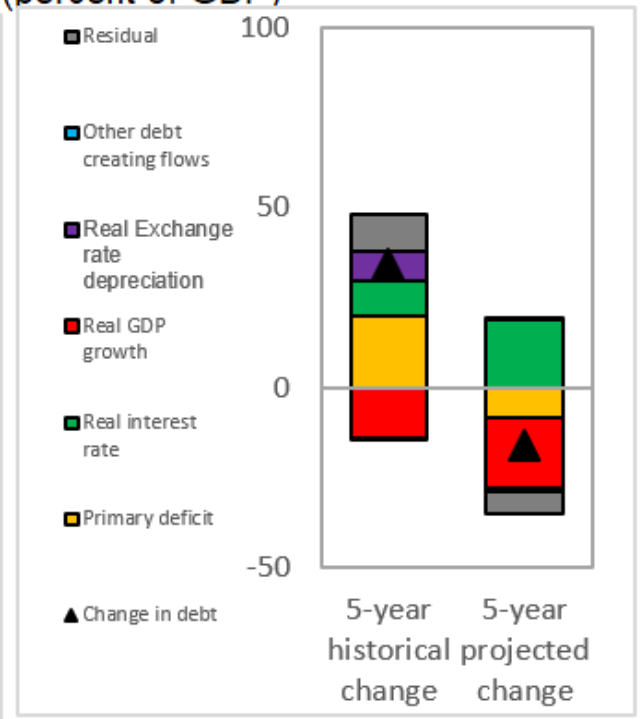
Realism tools, should we question the baseline?

Public debt

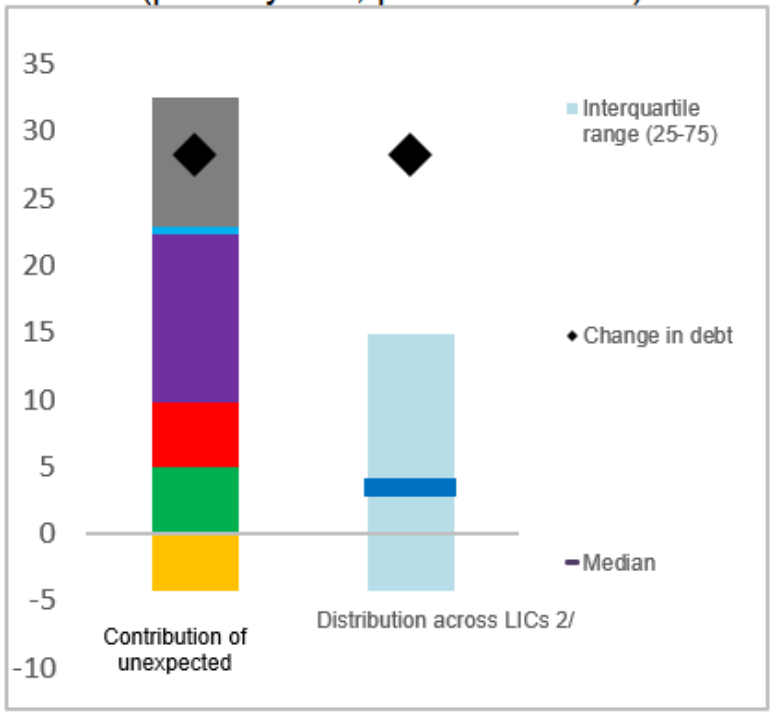
Gross Nominal Public Debt
(in percent of GDP; DSA vintages)



Debt-creating flows
(percent of GDP)



Unexpected Changes in Debt 1/
(past 5 years, percent of GDP)



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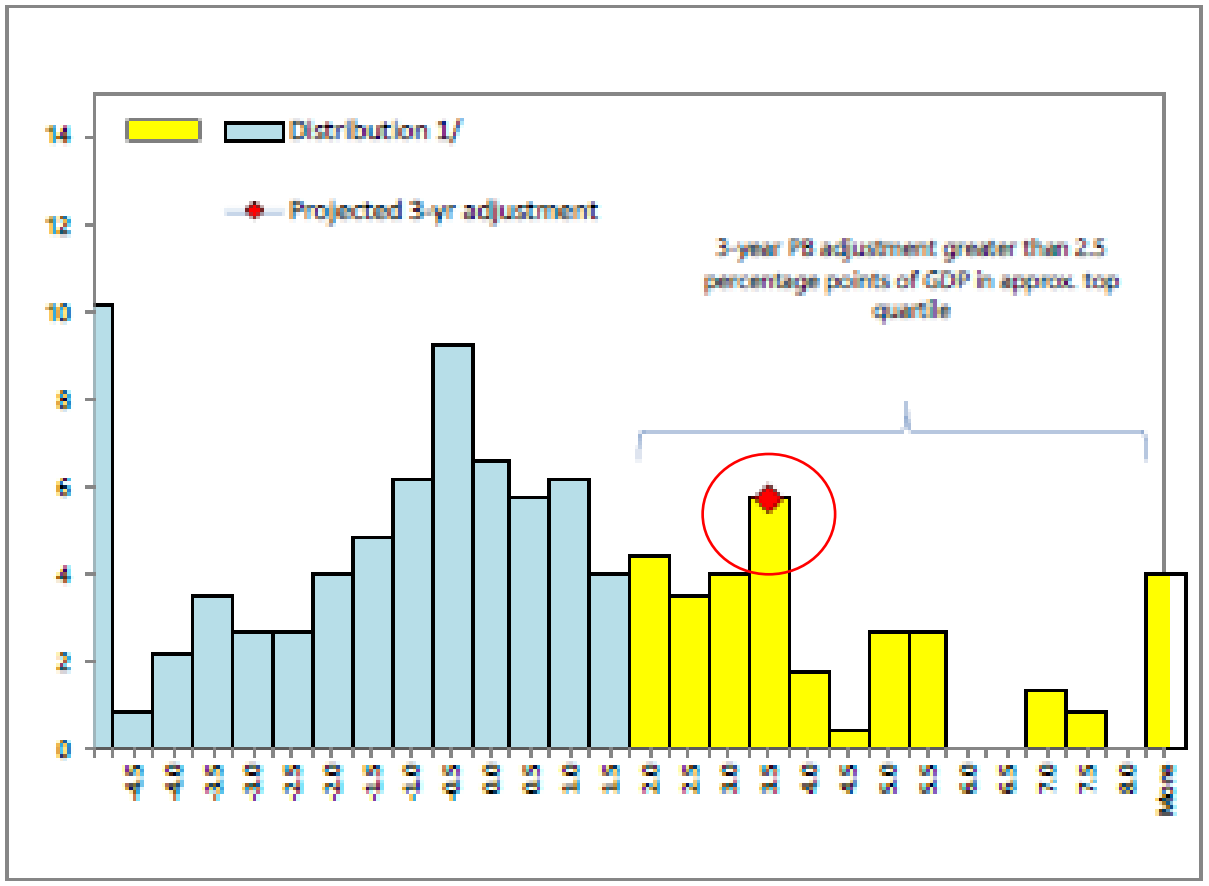
Realism tools, should we question the baseline?



1/ Data cover Fund-supported programs for LICs (excluding emergency financing) approved since 1990. The size of 3-year adjustment from program inception is found on the horizontal axis; the percent of sample is found on the vertical axis.

INTERNATIONAL MONETARY FUND

KENYA

REQUESTS FOR AN EXTENDED ARRANGEMENT UNDER THE EXTENDED FUND FACILITY AND AN ARRANGEMENT UNDER THE EXTENDED CREDIT FACILITY—DEBT SUSTAINABILITY ANALYSIS

March 19, 2021

9. The realism tools flag some optimism compared to historical performance, but staff is of the view that the projections are reasonable (Figure 4). While protecting social spending, the baseline scenario assumes an improvement of the primary balance of 3.7 percentage points of GDP over the next three years, which falls in the top quartile of the distribution for LICs. Staff is of the view that this is realistic and in line with the authorities' plan for fiscal consolidation under the program as set out in the 2021 Budget Policy Statement (BPS). The authorities' commitment to fiscal

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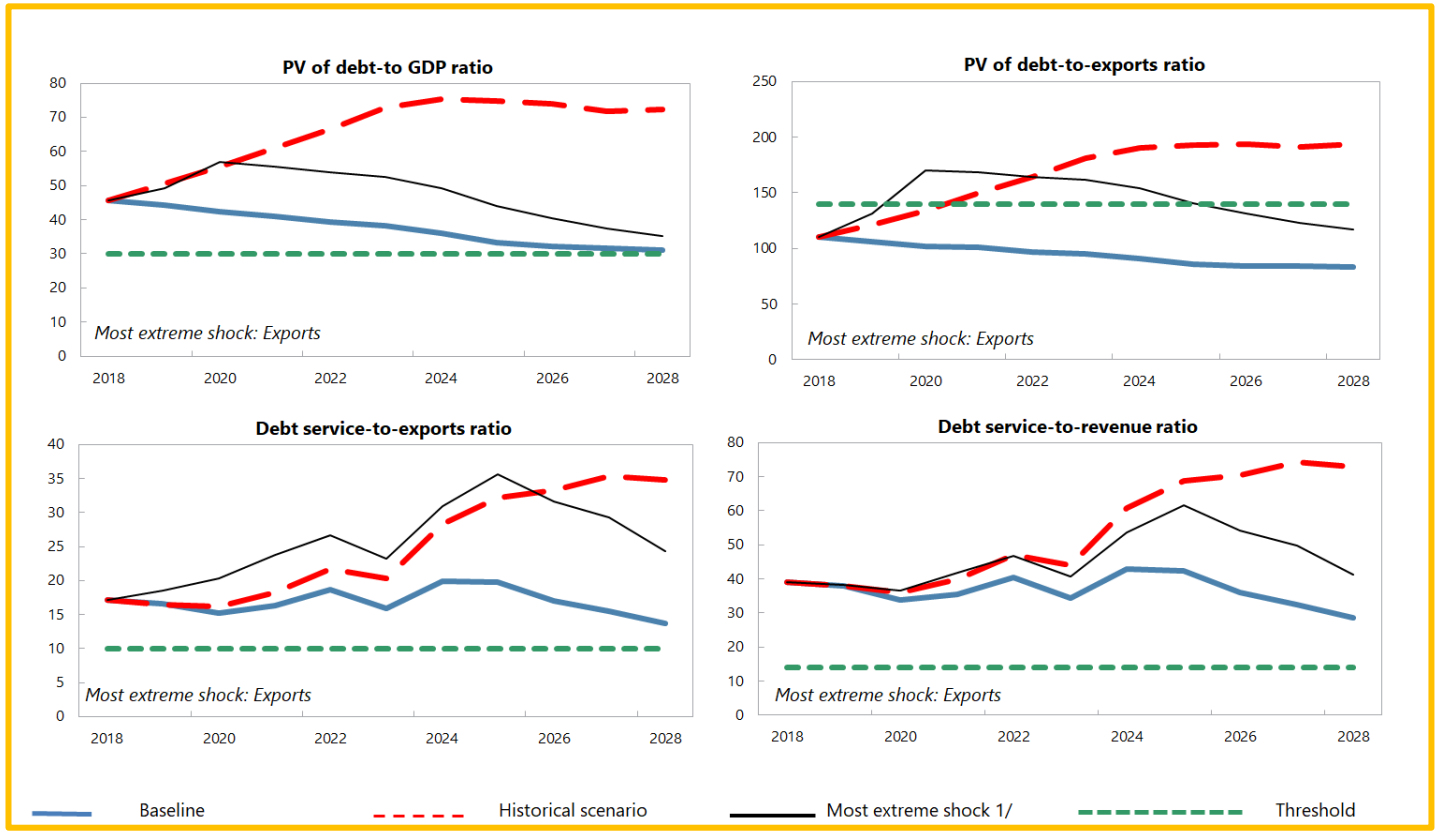
Why Are Stress Tests Necessary?

How Do Output Stress Tests Evaluate Debt Sustainability?

- Assessing uncertainty: Baseline realistic but future uncertain, **impact of uncertainty** can be assessed through **stress test scenarios**
- Examining shocks: Stress tests examine the impact of **temporary shocks** on the evolution of debt burden indicators in both external and public DSA
- Stress tests include standardized scenarios while allowing for customization to address specific risks not covered in the template
- Fully-customized scenarios: These scenarios are relevant for specific risks such as large delays in investment projects or policy slippages that can adversely affect growth and fiscal revenues,

Output Stress Tests
Provides a comprehensive assessment of debt sustainability indicators and the potential impacts of stress tests scenarios



What is the Significance of the Mechanical External Risk Rating?

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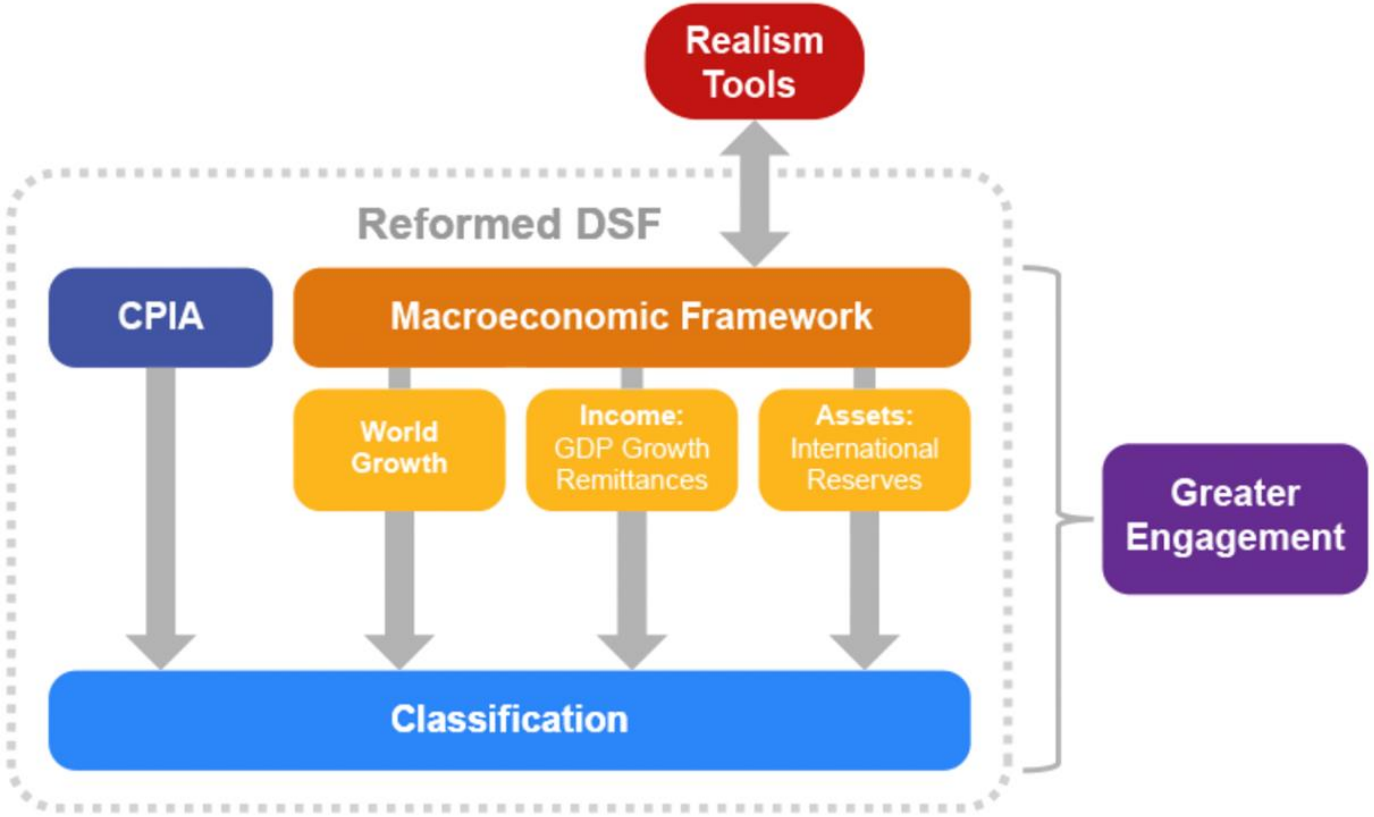
Why Does the Composite Indicator Matter?

The External Risk Rating is based on comparing a series of liquidity and solvency ratios against a **country's 'composite indicator'**



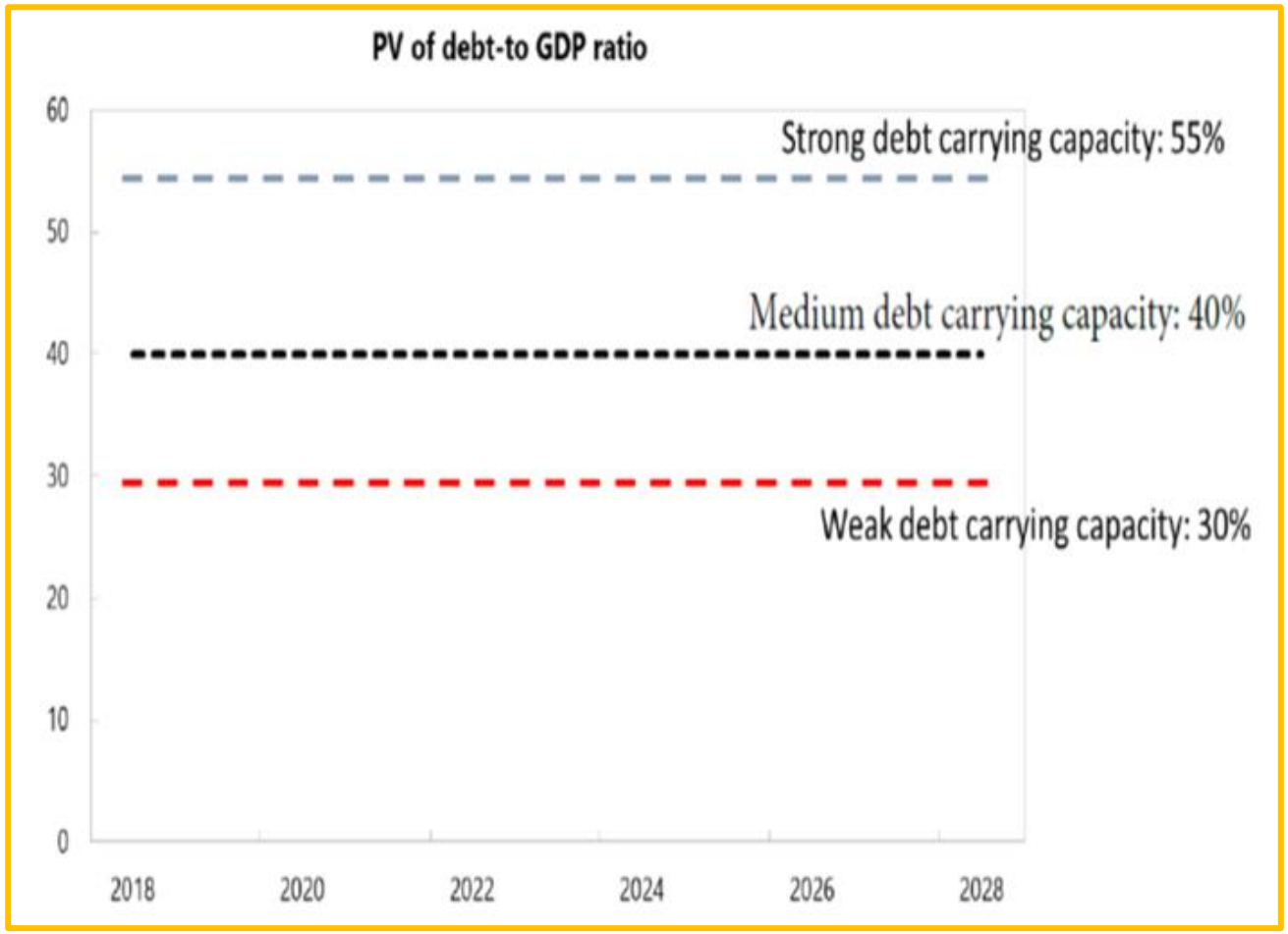
What are the External Debt Thresholds Based On?

Debt carrying capacity (CI classification)	PV of PPG external debt In percent of		PPG external debt service In percent of	
	GDP	Exports	Exports	Revenue
Weak	30	140	10	14
Medium	40	180	15	18
Strong	55	240	21	23

External Debt Thresholds

- The LIC DSF assigns different thresholds based on the debt-carrying capacities of different countries
- These thresholds represent the capacity to carry debt while maintain a low risk of debt distress

Debt Thresholds by Debt-Carrying Capacity
(PPG External Debt)



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Total Public Debt Benchmarks

Debt carrying capacity (CI classification)	PV of total public debt
	GDP
Weak	35
Medium	55
Strong	70

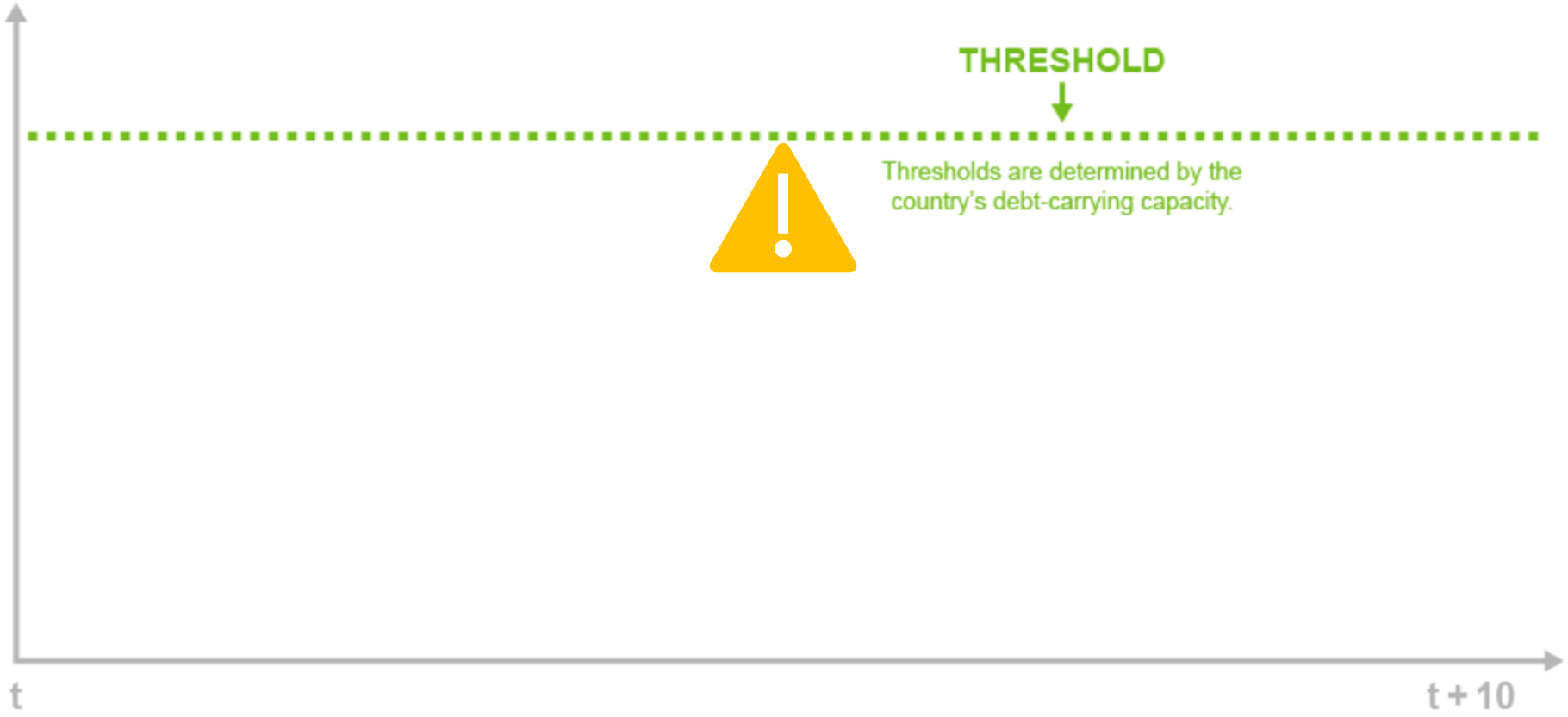
How is the External Risk Rating Determined?

	Baseline Breaches	Shock Breaches
Low	0	0
Moderate	0	1+
High	1+	1+
In debt distress	Already facing problems with repayment	

The LIC DSF produces mechanical signals for debt distress risk by comparing projections of each debt burden indicator (under the baseline and stress test scenarios) with its threshold

The Mechanical Rating is based on the number and types of breaches

How is the External Risk Rating Determined?



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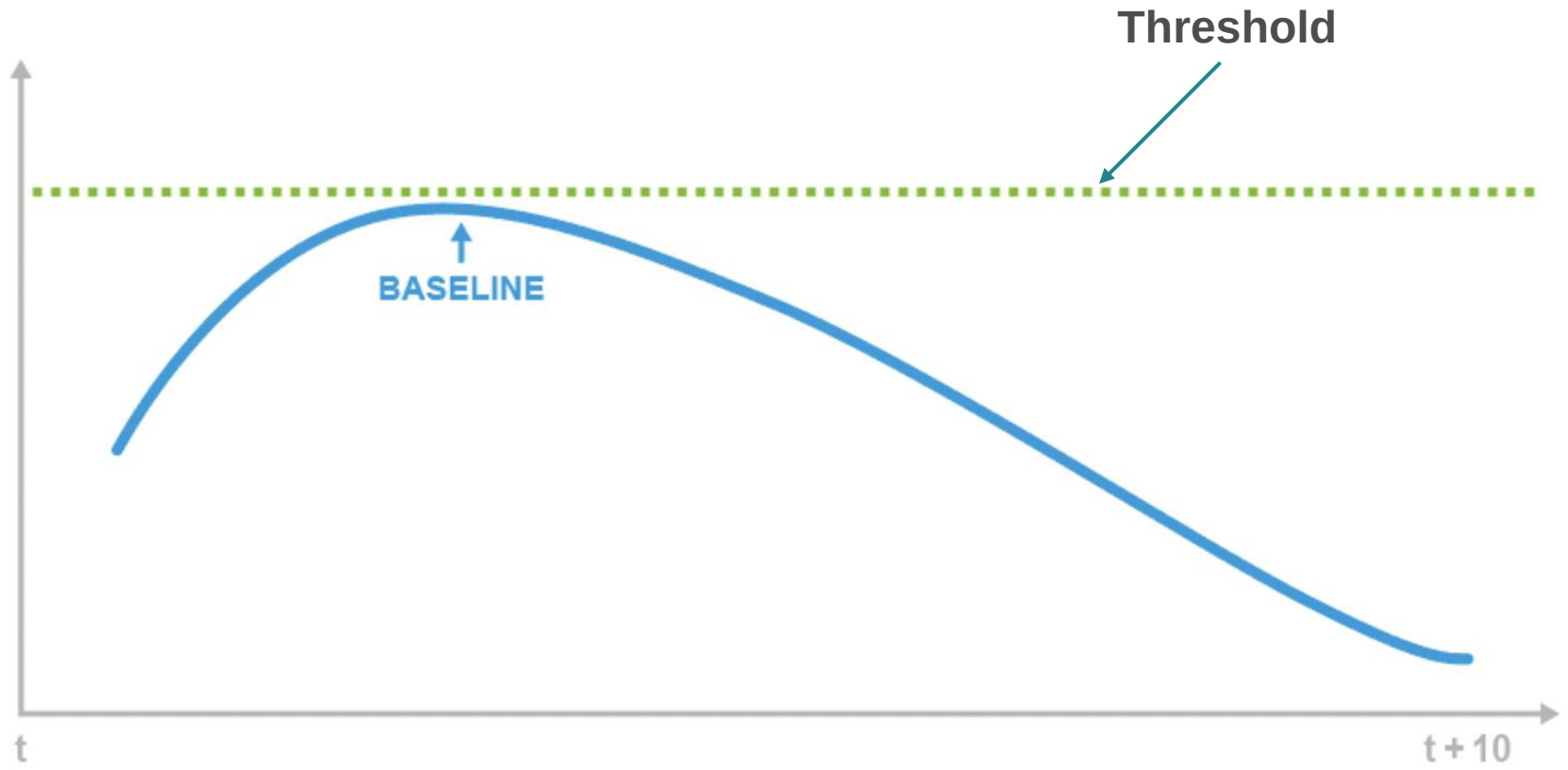
How is the External Risk Rating Determined?



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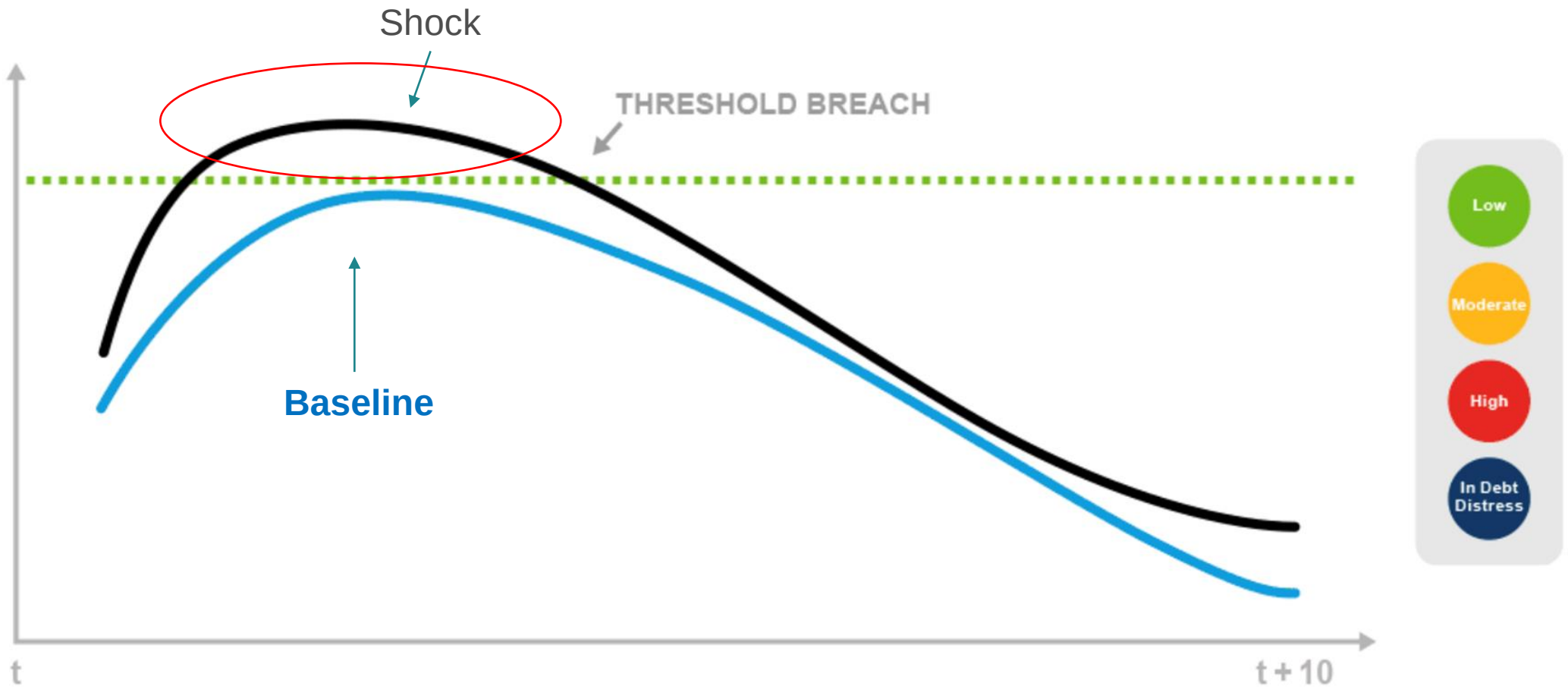
How is the External Risk Rating Determined?



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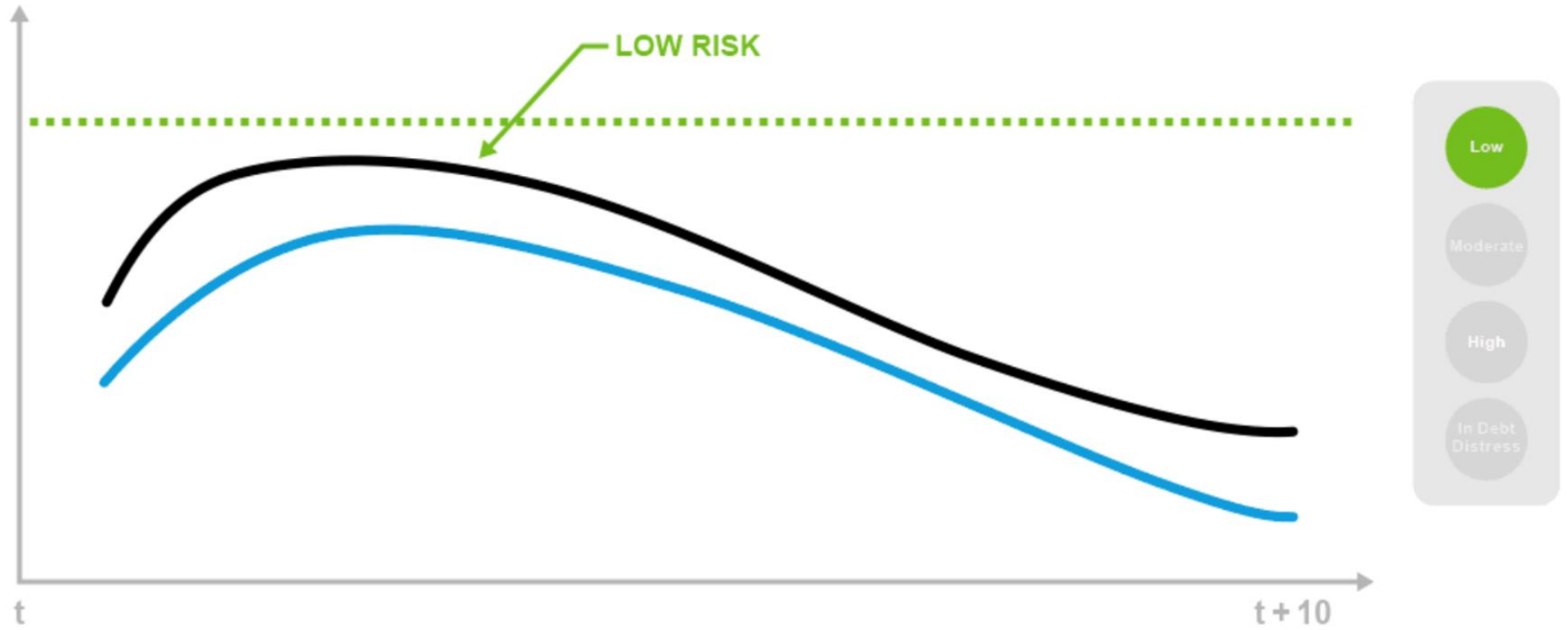

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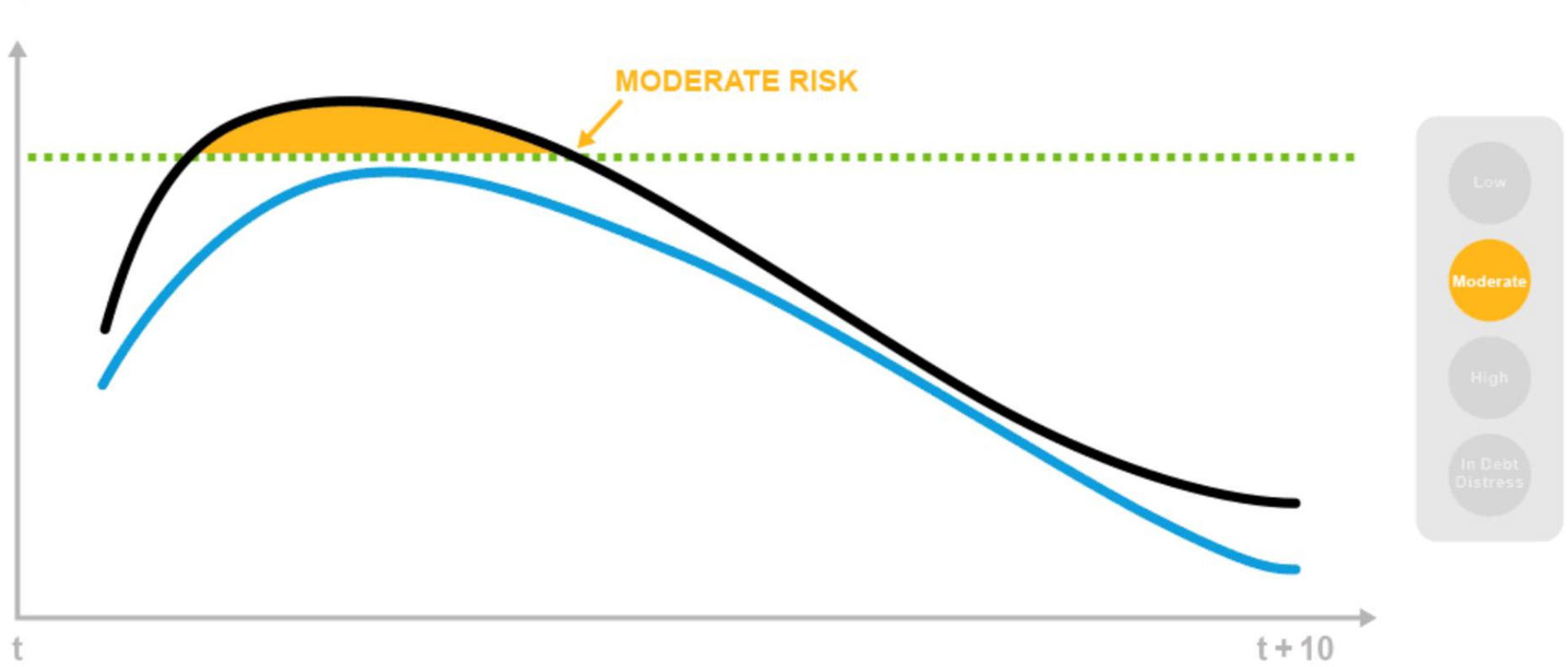

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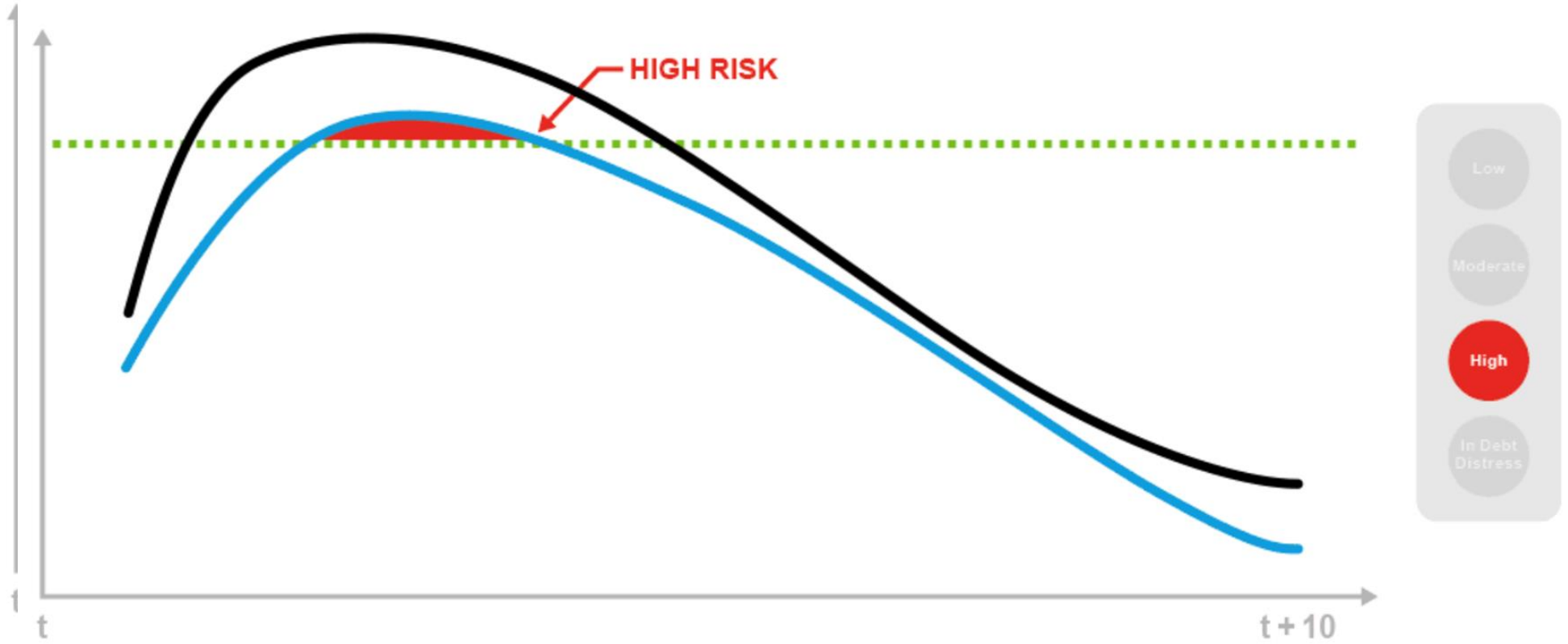
How is the External Risk Rating Determined?



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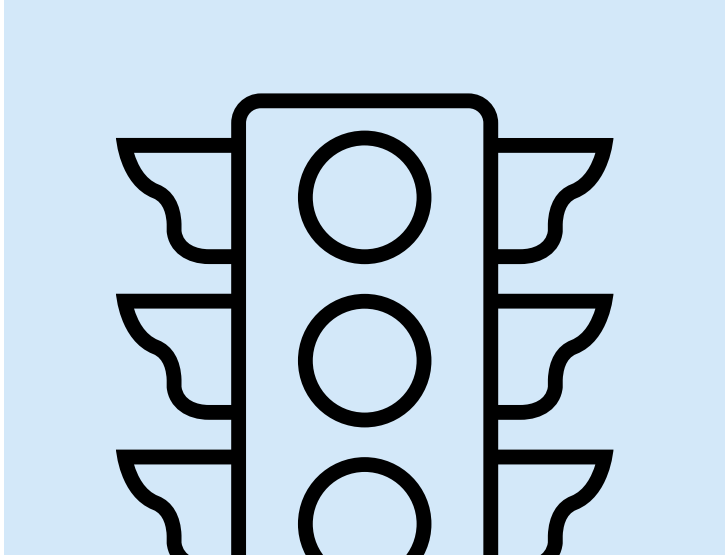

Overall Risk Rating of Public Debt Distress

- **Low**: PPG external debt low risk signal and total public debt-to-GDP below its benchmark under the baseline and most extreme shock
- **Moderate:** PPG external debt moderate risk signal or if PPG external debt is low and if public debt stock indicator breaches the thresholds/benchmark under the stress test
- **High**: if any of 4 external debt burden indicators or total public debt burden indicator breach their corresponding thresholds/benchmark under the baseline

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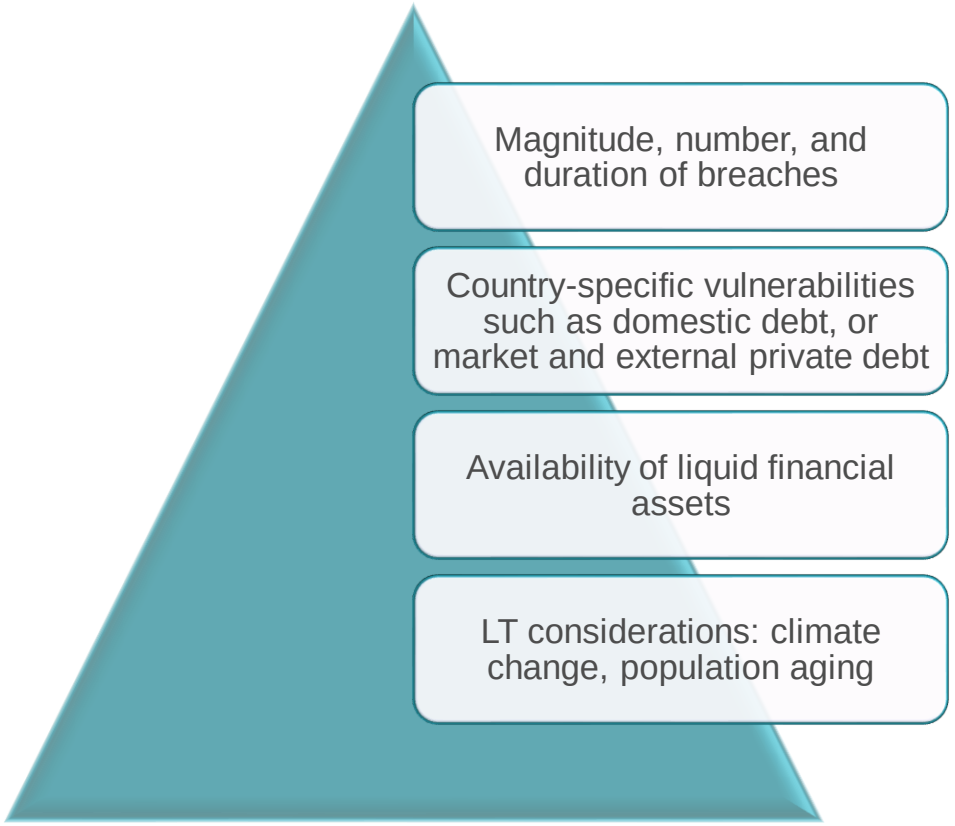
Output-Final Risk Rating

Country X **Joint Bank-Fund Debt Sustainability Analysis**	
Risk of external debt distress	*Please select the final external rating below in cell D49*
Overall risk of debt distress	*Please select the final overall rating below in cell D55*
Granularity in the risk rating	*[Enter applicable granularity in the risk rating: sustainability/moderate risk tool/ tool not applicable]*
Application of judgment	Yes: [judgements that were applied]

Why is judgement needed?

- Judgement plays an important role in the DSA process, complementing the mechanical risk derived from the underlying model
- It allows for considerations of factors that may not be captured by the DSF's model, addressing ambiguities
- The use of judgement is not meant to arbitrarily change the mechanical risk rating
- It incorporates additional vulnerability signals from factors such as domestic debt and market financing



Determining the Risk Rating: Factors and Considerations

- The determination of the final risk rating involves comparing debt burden indicators with established thresholds, providing a signal about the risk of debt distress
- **The final risk rating is derived from combining the mechanical risk** signal which is based on the quantitative assessment, with **judgement that incorporates additional considerations**
- The **primary DSF output is the external** debt distress **risk** rating, which remains the key focus
- The **overall risk** rating, although **supplementary, provides valuable additional** information
- Sovereign credit rating agencies, which primarily assess the risk of debt distress, tend to concentrate on market-based external public sector debt in their evaluations

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Why is judgement needed? Example: Guinea Bissau

GUINEA-BISSAU

REQUEST FOR DISBURSEMENT UNDER THE RAPID CREDIT FACILITY—DEBT SUSTAINABILITY ANALYSIS

Approved By
Annalisa Fedelino and Craig Beaumont (IMF) and Marcello Estevão (IDA)

Prepared jointly by the Staffs of the International Monetary Fund and the International Development Association [1, 2]

Guinea-Bissau: Joint Bank-Fund Staff Debt Sustainability Analysis	
Risk of external debt	*High*
Overall risk of debt	*High*
Granularity in the risk	*Sustainable*
Application of judgment	*Yes. The external rating has been downgraded from "Moderate" to "High" to reflect vulnerabilities from high overall public debt and substantial downside risks to the baseline scenario.*

'…all external debt indicators remain below the relevant indicative thresholds throughout the projection period…under the baseline scenario. Under the most extreme shock scenario…the PV of debt-to-exports ratio breaches the threshold for two years, implying a mechanical 'moderate' rating.

'However, Guinea Bissau faces substantial additional vulnerabilities that are not captured by this mechanical rating and which justify a 'high' external risk rating.

These include large downside risks to the macro baseline given the nature of the current COVID-19 crisis; high public debt, a large share of which is held by non-residents but denominated in CFAF, and hence not captured in the external DSA conducted on a currency basis; the structural vulnerabilities in the political domain; and the fact that the external DSA excludes private debt.'

‘In Debt Distress’ Risk Rating

- **External risk rating**: Indicates ongoing or impending **debt restructuring** negotiations or outstanding **external arrears**
- **Overall risk rating**: Reflects external debt distress and/or ongoing/impending **domestic debt restructuring** negotiations, or outstanding **arrears** on domestic debt instruments
- Debt distress event has already occurred

Quiz 4/4

Let’s go to Menti!

Mentimeter

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Case Studies (4)

- Break out in 2 room discussions:
  - Madagascar
  - Ghana
  - Kenya
  - Tonga

Madagascar

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Case study—Madagascar, Program Design and Objectives

- The program design takes into account the specific vulnerabilities faced by Madagascar, particularly its high exposure to climate-related shocks.
- The primary focus of the program is to mitigate the economic impact of the pandemic, maintain macroeconomic stability, and reignite the momentum for reforms.
- The overarching goal is to promote sustained economic growth and reduce poverty in the country.
- Given the significant infrastructure needs, the program will facilitate the scaling up of foreign-financed investments.
- External financing for the program will primarily be sought on concessional terms and through grants.

Case Study—Madagascar

Text Table 4. Madagascar: Baseline Macroeconomic Assumptions for DSA

	2020			2025			2030		
(In percent of GDP, unless otherwise indicated)	Article IV	Aug 2020	Current	Article IV	Aug 2020	Current	Article IV	Aug 2020	Current
Real GDP growth (percent)	5.2	-1.0	-4.2	5.5	5.5	5.0	5.2	5.2	5.0
Inflation, GDP Deflator (percent)	7.2	4.6	4.2	5.4	5.4	5.5	5.1	5.2	5.2
Non-interest CA deficit	0.9	3.1	6.1	1.6	2.6	3.2	1.8	3.3	3.6
Primary deficit	1.9	4.3	3.5	2.8	3.4	2.6	2.9	2.8	2.9

Sources: Malagasy authorities, World Bank and IMF.

- Macroeconomic assumptions:

1. What was the projected GDP contraction for Madagascar in 2020, and how does it compare to previous projections?
2. When is Madagascar expected to surpass its pre-shock forecasted output levels?
3. How is the fiscal deficit expected to evolve in the medium term, and what impact will it have on public debt?

Case Study—Madagascar

1. How does Madagascar's PV of external public and publicly guaranteed (PPG) debt level change from 2020 to 2040 under the baseline scenario?
2. How does endogenous debt dynamics affect the changes in Madagascar's external debt? What factors, such as nominal interest rate, real GDP growth, contribute to these dynamics?
3. How does the projected debt service to exports ratio change over the forecast period?
4. What is the grant element of new public sector borrowing in Madagascar? How does this element contribute to the financing mix and debt sustainability?

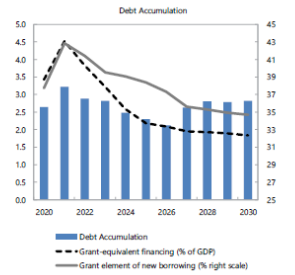
Table 1. Madagascar: External Debt Sustainability Framework, Baseline Scenario, 2017-2040

(In percent of GDP; unless otherwise indicated)

	Actual			Projections							Average 8/	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2040	Historical	Projections
External debt (nominal) 1/	**50.2**	**69.4**	**65.4**	**73.3**	**73.0**	**69.4**	**66.1**	**63.9**	**61.7**	**57.4**	**54.3**	**45.0**	**63.5**
of which: public and publicly guaranteed (PPG)	**25.7**	**26.4**	**26.6**	**32.0**	**34.7**	**36.1**	**37.3**	**38.1**	**38.6**	**43.2**	**47.9**	**24.6**	**38.4**
Change in external debt	-0.8	19.2	-3.9	7.8	-0.3	-3.6	-3.3	-2.3	-2.2	-0.3	-1.0		
Identified net debt-creating flows	**-7.4**	**-7.1**	**-2.9**	**7.7**	**0.5**	**-1.4**	**-1.9**	**-2.2**	**-2.2**	**-1.2**	**-0.6**	**-2.2**	**-0.7**
Non-interest current account deficit	**0.0**	**-1.2**	**1.7**	**6.1**	**4.5**	**3.9**	**3.8**	**3.4**	**3.2**	**3.6**	**3.6**	**2.9**	**3.8**
Deficit in balance of goods and services	3.3	3.4	4.6	9.1	8.8	6.9	6.9	6.6	6.6	6.7	6.9	**6.0**	**7.0**
Exports	30.9	31.2	27.8	18.3	23.1	26.3	27.6	28.0	28.6	26.8	24.3		
Imports	34.2	34.6	32.4	27.4	31.8	33.2	34.5	34.6	35.2	33.6	31.3		
Net current transfers (negative = inflow)	-5.6	-6.9	-5.5	-5.5	-5.3	-5.1	-5.1	-5.0	-5.1	-4.6	-4.2	**-5.5**	**-5.0**
of which: official	-2.5	-2.6	-3.0	-3.1	-2.3	-1.8	-1.3	-0.9	-0.6	-0.1	0.0		
Other current account flows (negative = net inflow)	2.3	2.3	2.6	2.5	1.1	2.1	2.0	1.8	1.7	1.5	0.9	**2.5**	**1.7**
Net FDI (negative = inflow)	**-2.7**	**-3.6**	**-2.6**	**-1.8**	**-2.2**	**-2.4**	**-2.8**	**-2.9**	**-3.0**	**-3.1**	**-3.2**	**-4.0**	**-2.8**
Endogenous debt dynamics 2/	**-4.8**	**-2.4**	**-2.1**	**3.4**	**-1.8**	**-2.9**	**-2.9**	**-2.6**	**-2.4**	**-1.7**	**-1.0**		
Contribution from nominal interest rate	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	1.0	1.4		
Contribution from real GDP growth	-1.8	-1.5	-2.9	2.9	-2.2	-3.4	-3.4	-3.2	-3.0	-2.7	-2.4		
Contribution from price and exchange rate changes	-3.3	-1.4	0.3	...	...	...	...	...	...	...	...		
Residual 3/	**6.6**	**26.3**	**-1.0**	**0.1**	**-0.8**	**-2.1**	**-1.4**	**-0.1**	**0.0**	**0.9**	**-0.4**	**5.9**	**0.0**
of which: exceptional financing	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0		
Sustainability indicators													
PV of PPG external debt-to-GDP ratio	...	...	**15.6**	**19.2**	**21.0**	**22.0**	**23.0**	**23.7**	**24.4**	**28.6**	**34.5**		
PV of PPG external debt-to-exports ratio	...	...	**56.1**	**104.4**	**91.1**	**83.7**	**83.3**	**84.8**	**85.3**	**106.8**	**141.9**		
PPG debt service-to-exports ratio	**5.6**	**2.9**	**2.8**	**4.4**	**3.9**	**4.2**	**4.9**	**4.9**	**4.9**	**7.3**	**10.6**		
PPG debt service-to-revenue ratio	**16.7**	**8.9**	**7.3**	**8.9**	**8.7**	**9.0**	**11.0**	**10.8**	**10.6**	**14.1**	**17.4**		
Gross external financing need (Million of U.S. dollars)	12.5	-488.0	699.5	1253.2	787.7	1168.5	1182.2	842.0	817.1	1149.6	2171.7		
Key macroeconomic assumptions													
Real GDP growth (in percent)	3.9	3.2	4.4	-4.2	3.2	5.0	5.4	5.2	5.0	5.0	4.6	**3.0**	**4.1**
GDP deflator in US dollar terms (change in percent)	7.0	2.8	-0.5	-0.5	3.2	3.1	2.7	1.9	1.7	1.6	1.7	**1.4**	**1.8**
Effective interest rate (percent) 4/	0.8	1.1	0.7	0.7	0.6	0.7	0.8	1.0	1.1	1.8	2.7	**1.0**	**1.1**
Growth of exports of G&S (US dollar terms, in percent)	21.6	7.0	-7.2	-37.2	33.9	23.7	13.3	8.7	9.1	5.1	5.6	**8.0**	**7.1**
Growth of imports of G&S (US dollar terms, in percent)	26.2	7.1	-2.5	-19.4	23.7	13.0	12.3	7.5	8.7	5.9	6.6	**2.5**	**6.7**
Grant element of new public sector borrowing (in percent)	...	...	...	37.7	42.9	41.4	39.5	39.1	38.4	34.7	31.4	...	**37.9**
Government revenues (excluding grants, in percent of GDP)	10.3	10.4	10.5	9.2	10.3	11.4	12.2	12.8	13.3	14.0	14.8	**9.3**	**12.6**
Aid flows (in Million of US dollars) 5/	588.5	615.5	733.4	436.7	853.1	889.3	903.7	846.2	831.4	1078.7	1412.8		
Grant-equivalent financing (in percent of GDP) 6/	...	...	...	3.4	4.5	3.8	3.2	2.6	2.2	1.8	1.3	...	**2.7**
Grant-equivalent financing (in percent of external financing) 6/	...	...	...	55.4	60.0	57.7	52.4	49.7	47.0	35.7	31.4	...	**46.8**
Nominal GDP (Million of US dollars)	13,176	13,974	14,519	13,837	14,746	15,972	17,283	18,524	19,776	27,295	51,511		
Nominal dollar GDP growth	11.2	6.1	3.9	-4.7	6.6	8.3	8.2	7.2	6.8	6.7	6.4	**4.4**	**6.0**
Memorandum items:													
PV of external debt 7/	...	...	54.5	60.4	59.3	55.4	51.8	49.5	47.5	42.8	40.9		
In percent of exports	...	...	195.6	329.4	257.1	210.2	187.7	176.9	165.9	159.5	168.1		
Total external debt service-to-exports ratio	9.0	4.1	20.3	25.9	13.2	22.2	21.1	14.6	13.8	13.8	15.6		
PV of PPG external debt (in Million of US dollars)			2267.8	2650.8	3095.4	3521.0	3970.2	4398.7	4824.2	7816.0	17784.3		
(PVt-PVt-1)/GDPt-1 (in percent)				2.6	3.2	2.9	2.8	2.5	2.3	2.8	2.1		
Non-interest current account deficit that stabilizes debt ratio	0.9	-20.4	5.7	-1.7	4.8	7.5	7.1	5.6	5.3	3.9	4.6		

Sources: Country authorities; and staff estimates and projections.

Definition of external/domestic debt	**Currency-based**
Is there a material difference between the two criteria?	**No**



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Case Study—Madagascar

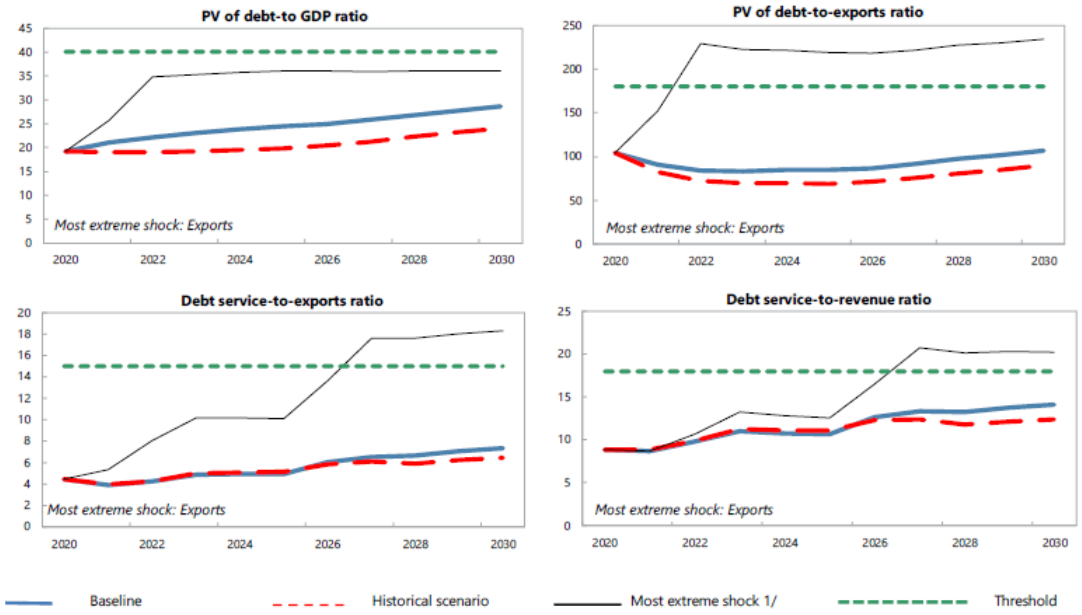
1. How do debt service indicators, such as the debt service to exports ratio, change over the projection period, and how do they compare to applicable thresholds for Madagascar?

2. Which specific debt indicators breach the external medium-carrying capacity thresholds for Madagascar under the exports shock scenario?

3. How does the exports shock scenario impact Madagascar's external debt-to-GDP ratio in 2022? Does it breach the indicated threshold of 40 percent?

4. In terms of external risk rating, how would you classify Madagascar's risk of debt distress based on the analysis? How does the breach of the external PPG debt thresholds contribute to this assessment?

Figure 1. Madagascar: Indicators of Public and Publicly Guaranteed External Debt Under Alternatives Scenarios, 2020-2030



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Ghana

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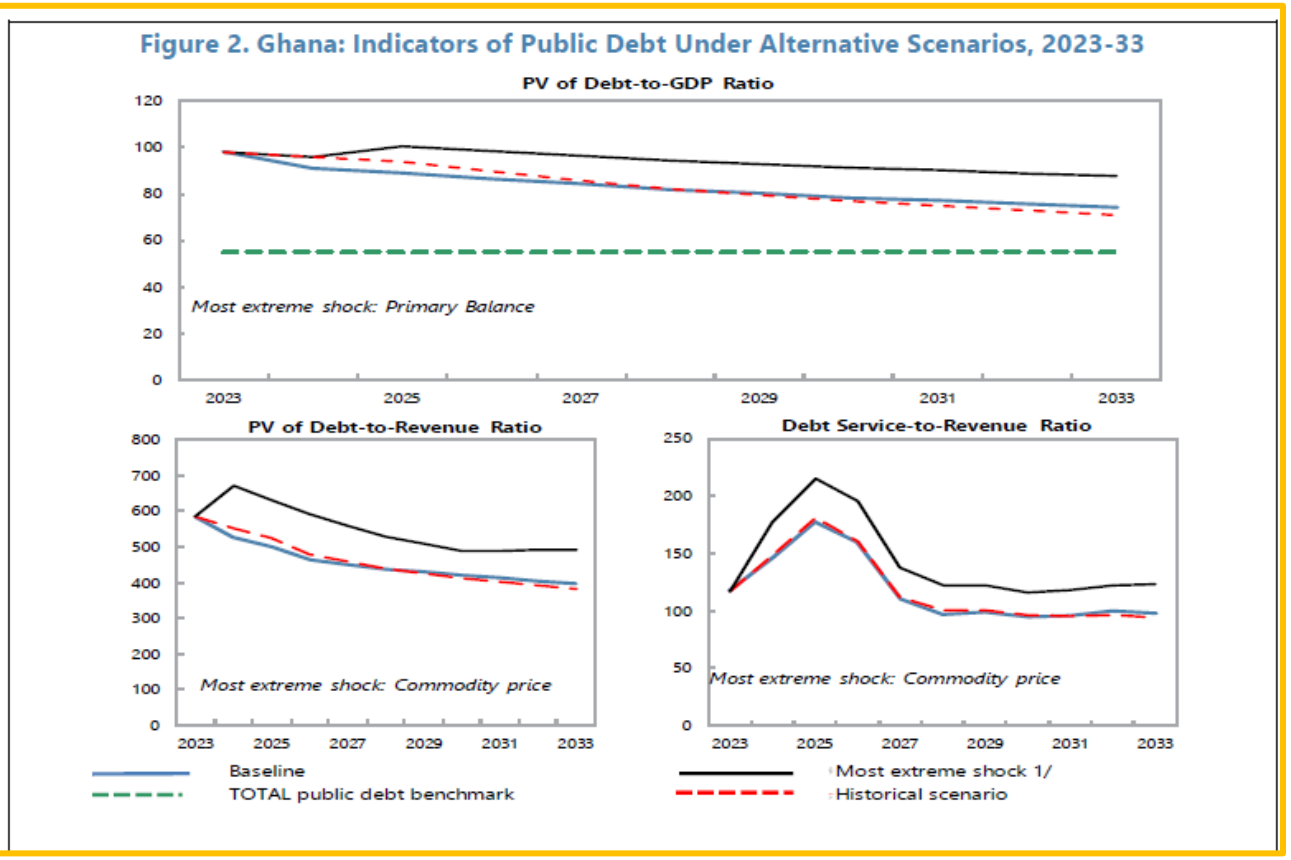
Case Study—Ghana



1. How does a one standard deviation deterioration in the primary balance affect the public debt-to-GDP indicator in Ghana?
2. What is the significance of the commodity price shock on other public debt indicators
3. Considering the breaches in the PV of total PPG debt-to-GDP throughout the medium and long term, what are the main challenges in reducing Ghana's public debt to GDP below the 55 percent benchmark?
4. How would you assess the risk rating of public debt? Please explain the basis for your assessment.
5. Would you say that the overall risk of debt distress is?
6. Do you think there is room for the application of judgement in this case?

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Kenya

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Tonga

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Questions and Answers

E1

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Post-Course Questionnaire (Test-out)

Participants’ feedback

Takeaways

- Understanding solvency and liquidity concepts is essential for grasping the main principles and concepts of debt sustainability.
- Debt Sustainability Analysis (DSA) plays a crucial role in assessing public debt dynamics and evaluating the sustainability of a country's debt.
- Unsustainable debt can have significant implications and may require debt default or restructuring measures to address the situation.
- Policy adjustments and reforms are necessary to ensure sustainable debt levels and mitigate the risks associated with excessive debt.
- Familiarizing yourself with the terminology used in DSA enables better comprehension and communication of debt-related concepts and assessments.
- Grasping the theoretical concepts underlying debt dynamics in the LIC IMF/WB Debt Sustainability Framework/Analysis enhances the understanding of debt sustainability issues.
- Learning to interpret and analyze outputs in IMF/WB reports, including country case studies, helps in gaining insights into the practical application of DSA and its implications for different countries.

Thank you

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