BOSNA I HERCEGOVINA
MINISTARSTVO FINANCIJA/
FINANSIJA I TREZORA

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ФИНАНСИЈА
И ТРЕЗОРА

BOSNIA AND HERZEGOVINA
MINISTRY OF FINANCE
AND TREASURY

Bosnia and Herzegovina Public Debt Sustainability Analysis 2022-2025

Sarajevo, April 2023

Content:

Introduction

The Analysis of the Sustainability of Public Debt in Bosnia and Herzegovina (DSA BiH) was prepared based on the methodology developed by the International Monetary Fund for countries with market access (MAC DSA Methodology)[1].

The objective of the Analysis of the Sustainability of Public Debt in Bosnia and Herzegovina is to assess the current state of public indebtedness in BiH and project its trajectory in the medium term, as well as to identify key risks that can affect the sustainability of public debt.

It is important to emphasize that this approach does not explicitly determine a threshold at which public debt becomes unsustainable. Instead, it provides a set of indicators, information, and implications defined by stress tests to assess whether the current state and projected trajectory of public debt are sustainable, and under what conditions.

The analysis of the sustainability of public debt helps in the effective management of public finances and macroeconomic stability by illustrating the effects and consequences of public indebtedness and the impact of different debt portfolio scenarios on specific macroeconomic indicators.

[1] http://www.imf.org/external/pubs/ft/dsa/mac.htm

Methodological explanations

The analysis at hand involves estimating key macroeconomic variables, projecting the trajectory of public debt, and examining the sensitivity of projected debt movements to various macroeconomic shocks in line with the MAC DSA methodology.

According to the MAC DSA methodology, the analysis is based on a formal and standardized tool (MAC DSA template). In order to facilitate the preparation of the Analysis of the Sustainability of Public Debt, a MAC DSA template has been developed, based on risks, which implies that the same level of analysis is not required for all countries. Additionally, a distinction is made between two types of countries: advanced economies (AE) and emerging market economies (EM)[2].

To assess debt sustainability and debt risks, it is necessary to consider debt in relation to certain indicators, and the analysis utilizes debt burden indicators and debt profile indicators. Since the MAC DSA methodology differentiates between two groups of countries, the indicators used have different threshold values for EM and AE countries. Since Bosnia and Herzegovina (BiH) is classified as an emerging market economy, the Analysis of the Sustainability of Public Debt in BiH employs debt burden and profile indicators for EM countries (Table 1).

Table 1. Debt burden and debt profile indicators for BiH in 2021

	Indicators	BiH (2021)
Debt burden indicators		
Public debt (% of GDP)	60	32.2
Gross financing needs of the public sector (% of GDP)[3]	15	3.1
Indikatori profila duga		
Debt profile indicators	800	513.7
Bond yield spreads (basis points)[4]	20	17.5
External financing needs (% of GDP)[5]	60	75.7
Public debt held by non-residents (% of total debt)	80	75.7
Public debt in foreign currency (% of total debt)[6]	1.5	-1.3

[2] Countries are classified as AE or EM based on their classification in the World Economic Outlook. (Source: https://www.imf.org/en/Publications/WEO/weo-database/2022/October/select-country-group)

[3] This classification considers primary balance, interest, and principal payments of public debt, as well as other factors such as bank recapitalization, privatization receipts, deposit withdrawals, changes in arrears, and debt discharge.

[4] As of December 31, 2021, the Republic of Srpska issued 5-year bonds on international financial markets (Vienna Stock Exchange and London Stock Exchange).

[5] Defined as the balance of the current account plus the repayment of total short-term external debt (private and public) by remaining maturity.

[6] The change in short-term public debt (based on the original maturity) as a percentage of total public debt at the end of the current year compared to the end of the previous year is defined as the change in short-term public debt.

Assumptions for the Analysis of the Sustainability of Public Debt in BiH

The quality of input data, both historical and macro-fiscal projections (baseline scenario), plays a crucial role in the preparation of the analysis of public debt sustainability. Unrealistic macroeconomic assumptions can lead to a distorted picture when defining the results in the analysis.

The key input data used for the DSA BiH were historical data from the Central Bank of BiH, the Agency for Statistics of BiH, the Ministry of Finance and Treasury of BiH (MFT), the entity ministries of finance, and the Finance Directorate of the Brčko District. The projections were based on the macroeconomic indicators projections from the Directorate for Economic Planning of BiH (DEP) for the period 2021-2026, as of March 2023, fiscal projections of the general government from the Global Fiscal Balance and Policies Framework in BiH for 2023-2025, projections of interest rate movements on external debt from the Medium-Term Debt Management Strategy of BiH, and data from the MFT on domestic and external debt of BiH.

The DSA BiH includes public debt, which consists of the internal debt of entities and the Brčko District, the internal debt of public enterprises established by the Institutions of BiH[7], and the external debt of Bosnia and Herzegovina, which includes the external state debt[8], external debt of entities and the Brčko District[9], external debt of local government units[10], and external debt of public enterprises established by the Institutions of BiH[11].

The projected state of external debt of BiH for the period 2022-2025 is based on the amount of disbursed loan funds, which is increased by estimated disbursements for projects under implementation and projects in the pipeline[12], and reduced by the estimated amount of principal repayment.

The DSA BiH assumes that:

- The credit rating of BiH will not be downgraded in the medium term,
- There will not be significant increases in exchange rates,
- There will be a significant increase in benchmark interest rates,

[7] The internal debt of public enterprises established by the Institutions of BiH refers to the debt of public enterprises registered in the Registry of Legal Entities Established by the Institutions of BiH, which is maintained by the Ministry of Justice of BiH. The contracting and servicing of these loans are conducted directly between the enterprises and creditors.

[8] The external state debt is the government debt incurred in accordance with an international agreement, with the Ministry of Finance and Treasury of Bosnia and Herzegovina acting as the borrower on behalf of Bosnia and Herzegovina.

[9] The external debt of entities and the Brčko District is the debt of entities and the Brčko District incurred in accordance with an international agreement, with the entity ministries of finance or the Finance Directorate of the Brčko District of BiH acting as borrowers on behalf of the respective entity or district.

[10] The external debt of local government units refers to the debt subject to an international agreement concluded directly between the local government unit and the creditor, and it is serviced directly by the local government unit.

[11] The external debt of public enterprises refers to the external debt of public enterprises registered in the Registry of Legal Entities Established by the Institutions of BiH, which is maintained by the Ministry of Justice of BiH. The contracting and servicing of these loans are conducted directly between the enterprises and foreign creditors.

[12] Projects in the pipeline refer to projects that are in the process of initiating negotiations, negotiating with creditors, and undergoing approval procedures by creditors, as well as projects that have been concluded and are undergoing the ratification process. These projects include infrastructure projects in the fields of transportation, railways, water supply, and utilities, as well as projects in energy, healthcare, agriculture, banking, education, budget support, and others.

- The Central Bank of Bosnia and Herzegovina will continue to maintain monetary stability in accordance with the arrangements of the currency board, as specified in the Law on the Central Bank of BiH, and
- There will not be significant delays in the implementation of projects financed or planned to be financed from external sources, as recorded by the Ministry of Finance and Treasury.

The DSA BiH is based on assumptions presented in Table 2, which represent the baseline scenario in the analysis.

The main risks in the projections of the baseline scenario for 2022-2025 are:

- The realization of DEP's assumptions regarding the real GDP growth from the projections of macroeconomic indicators for the period 2022-2025 and fiscal projections from the Global Framework for Fiscal Balance and Policies in BiH for the period 2023-2025, which define the financing needs and directly impact the decrease/increase of the debt level,
- The realization of assumptions regarding variable interest rates and exchange rates,
- The realization of assumptions regarding the pace of fund disbursement for ongoing external loans and loans in the process of conclusion, and
- Downgrading of BiH's credit rating in the medium term.

Applied Scenarios and Stress Tests

The baseline scenario represents a medium-term macroeconomic and fiscal projection, the realization of which is influenced by numerous risks, and their impact is sought to be assessed by considering the implications of shocks and scenarios.

The result of the baseline DSA includes: (i) selected economic indicators in line with the baseline scenario, including the evolution of debt burden indicators; (ii) the latest relevant market indicators such as risk ratings, EMBI, and CDS spreads; (iii) debt dynamics in line with the baseline scenario, representing the contribution of different factors to the evolution of the debt-to-GDP ratio; (iv) a debt-stabilizing primary balance; (v) maturity structure (short-term versus medium- and long-term debt) as well as the currency composition of public debt (debt denominated in domestic currency versus foreign currency); and (vi) a comparison of the evolution of debt burden indicators in line with the baseline scenario, historical scenario, constant primary balance scenario, and, where appropriate, potential liability scenarios and adjusted scenarios.

The key question is to assess whether the debt burden indicators, particularly the level and path of the debt-to-GDP ratio, will remain at or below levels that are consistent with acceptably low risk and the preservation of satisfactory growth during the forecast period, considering cyclical factors that need to be taken into account, not only in line with the baseline scenario but also in line with an alternative or other possible stressed scenarios.

In this regard, in order to assess the sensitivity of the baseline scenario to defined shocks and changes and identify the key risks affecting debt sustainability, two alternative scenarios and six stress tests were applied in the DSA BiH.

- Two standardized alternative scenarios were applied, namely the historical scenario and the constant primary balance scenario, whose results are presented in Table 3. A description of these scenarios is provided below:

- **Historical scenario** - the growth of real GDP, primary balance, and real interest rate are set at historical averages, except for the first year of projection where the values are the same as in the base scenario. Other variables remain the same as in the base scenario.
- **Constant primary balance scenario** - the ratio of the primary balance to GDP throughout the entire projection period is set at the value from the first year of the projection, while other variables remain the same as in the base scenario.

- The stress tests applied in the DSA BiH encompass a decline in real GDP growth, an increase in the primary deficit relative to GDP, an increase in the interest rate, depreciation of the domestic currency, a combination of these shocks, and a shock to potential obligations of the financial sector (Table 4). A more detailed explanation of these stress tests is provided below:

- **Primary balance**: from the second year of the projection, the ratio of the primary balance to GDP is equivalent to 50% of the planned cumulative adjustment or deviation of the primary balance from the historical average. This interaction leads to an increase in the interest rate by 25 basis points for every 1% increase in the primary deficit relative to GDP.
- **Real GDP growth**: real GDP growth decreases by one standard deviation for two consecutive years of the projection (historical average minus one standard deviation). The decreased real growth leads to lower inflation (0.25 percentage points decrease in inflation for every 1 percentage point decrease in GDP growth). The income-to-GDP ratio remains the same as in the base scenario, but the ratio of primary expenses to GDP increases due to the unchanged level of expenditure, resulting in a decrease in the primary balance. The decrease in the primary balance leads to an increase in the interest rate by 25 basis points.
- **Interest rate**: the nominal interest rate increases during the projected period, excluding the first year of the projection, by the difference between the maximum real interest rate in the last ten years and the average real interest rate during the projection period.
- **Exchange rate**: depreciation of the domestic currency by 30% during the projected period, excluding the first year of the projection, and the impact of the exchange rate on inflation with a given elasticity of 0.25 in the second year of the projection.
- **Combined macro-fiscal shock**: this involves aggregating individual shocks while avoiding double-counting the effects of individual shocks that affect multiple variables. The combined shock includes the largest effects of individual shocks on all corresponding variables (real GDP growth, inflation, primary balance, exchange rate, and interest rate), excluding the first year of the projection.
- **Financial sector potential obligations shock**: a one-time increase in primary expenses equivalent to 10% of the banking sector's assets in the second year of the projection leads to a shock to real GDP growth, resulting in a decrease in real growth by one standard deviation for two consecutive years. The income-to-GDP ratio remains the same as in the

base scenario. Consequently, the primary balance decreases, leading to a higher interest rate, while the decrease in real growth leads to lower inflation.

The MAC DSA template presents the debt dynamics for each of the mentioned scenarios and stress tests. Based on the results obtained from these scenarios and stress tests, an assessment can be made regarding the sustainability of public debt over a specific time period.

Results of the Public Debt Sustainability Analysis for Bosnia and Herzegovina

The results of the debt sustainability analysis highlight the major risks that can affect debt sustainability (Table 5.) and provide qualitative assessments of debt sustainability, primarily relying on the quality of historical data and macro-fiscal estimations.

- The DSA results indicate that Bosnia and Herzegovina has a medium-term sustainable public debt based on the baseline scenario for the period 2022-2025. This is achieved with real GDP growth ranging from 2.0% to 3.7%, inflation ranging from 2.5% to 7.7%, a primary balance ranging from -1.8% to 0.2% of GDP, and an effective interest rate ranging from 2.0% to 3.5%.
- Furthermore, the analysis has shown that the main risks affecting debt sustainability stem from the debt profile. The key risks in public debt lie in the share held by non-residents, external financing needs, debt in foreign currencies, and market perception. Specifically, the debt profile indicator related to the share of public debt held by non-residents exceeds the indicative threshold and represents a significant risk to debt sustainability in the medium term, as 75.7% of the public debt is held by non-residents, which is above the indicative threshold of 60%. External financing needs do not exceed the indicative threshold of 20%, but they pose a high risk, amounting to 17.5% of GDP (moderate risk is assumed to be 5-15%, and high risk is above 15%). The level of this risk was mostly influenced by external short-term private debt.
- Indicators such as the share of public debt in foreign currencies as a percentage of total debt and bond yield spreads do not exceed the indicative thresholds but pose certain risks to debt sustainability. The share of public debt in foreign currency, which amounts to 75.7% of the total public debt, represents a high risk that can impact debt sustainability (moderate risk is assumed to be 20-60%, and high risk is above 60%). However, considering the currency board arrangement implemented by the Central Bank, which links the currency KM to the Euro, 27.3% of the public debt is subject to exchange rate fluctuations. Due to the high share of debt in Euro currency, this risk is regarded as moderate. The market perception risk is moderate, with a spread of 513.7 basis points for the average bond spread[13], as moderate risk is assumed to be 200-600 basis points, and high risk is above 600 basis points[14].
- The indicators of debt burden (public debt/GDP and interest payments/GDP) under the baseline scenario and stress tests are within the defined thresholds.

[13] Bond spreads are defined as the difference in yields between two bonds, specifically the yield of one bond subtracted from the yield of another. The term "bond spread" reflects the relative risks of comparing bonds. A wider spread indicates a higher risk.

[14] Basis points (bps) refer to a common unit of measurement for interest rates and other percentages in finance. The relationship between percentage changes and basis points can be summarized as follows: 1% change = 100 basis points, or 0.01% = 1 basis point.

- The public debt/GDP indicator in 2021 is 32.2%, which is not considered high according to international standards. The decrease in this indicator compared to the previous year was due to the increase in economic activity after the impact of the global health crisis caused by the Covid-19 pandemic. Domestic demand, driven by increased final consumption and investments, has been a key driver of economic growth in the country, but it has also led to heightened inflationary pressures and significantly high rates of price increases for goods and services. According to the baseline scenario projections, this indicator is expected to decrease from 32.2% in 2021 to 29.2% in 2022, 27.7% in 2023, 26.6% in 2024, and 26.1% in 2025. This trend is primarily a result of significantly higher GDP growth compared to the increase in the level of public debt during the projected period. Additionally, the repayments of existing debt related to Eurobonds and IMF arrangements will offset new borrowing, resulting in no significant increase in the total public debt. However, considering the coefficient of variation in real GDP growth, there is a certain risk associated with achieving this indicator and the potential worsening of the projected public debt/GDP ratio.
- The interest payments/GDP indicator, under the baseline scenario, is expected to increase from 3.1% in 2021 to 3.6% in 2022, reach 5.0% in 2023, and then decrease to 3.4% in 2024 and 2.3% in 2025. Compared to 2021, the increase in interest payments in 2022 is mainly a result of the projected primary deficit of 0.2% of GDP, compared to the achieved primary surplus of 1.4% of GDP in 2021. However, due to the expected increase in economic activity in the coming period, a surplus of 0.4% in 2023 and 1.8% in 2025 is anticipated.
- The debt service as a percentage of revenue, under the baseline scenario, is projected to be 11.0% in 2021, 8.6% in 2022, 13.7% in 2023, 12.0% in 2024, and 10.5% in 2025. The highest debt service obligations in the projected period are expected in 2023, primarily due to the current external debt. Assessing the realism of the projected path of the primary balance by comparing it to the historical primary balance of the country indicates a high risk in achieving it. Therefore, caution is needed regarding the debt repayment profile, considering the potential variations in the realization of revenue and expenditure projections.

Table 2 BIH Public Sector Debt Sustainability Analysis (DSA) - Baseline Scenario

(in percent of GDP unless otherwise indicated)

Debt, Economic and Market Indicators [1/]

	Actual			Projections			
	2011-2019 [2/]	2020	2021	2022	2023	2024	2025
Nominal GDP (in million BAM)	31.065,48	35.435,8	39.921,0	44.590,0	47.438,0	49.926,0	52.705,0
Nominal gross public debt	35,9	34,4	32,2	29,2	27,7	26,6	26,1
Public gross financing needs	3,7	8,4	3,1	3,6	5,0	3,4	2,3
Public debt (in percent of potential GDP)	36,1	32,1	31,7	29,8	28,2	26,7	26,1
Real GDP growth (in percent)	2,6	-3,3	7,6	3,7	2,0	2,7	3,0
Inflation (GDP deflator, in percent)	1,0	0,3	4,7	7,7	4,3	2,5	2,5
Nominal GDP growth (in percent)	3,6	-3,0	12,7	11,7	6,4	5,2	5,6
Effective interest rate (in percent) [4/]	2,1	2,3	2,0	2,0	2,4	3,1	3,5

As of februar 03, 2023

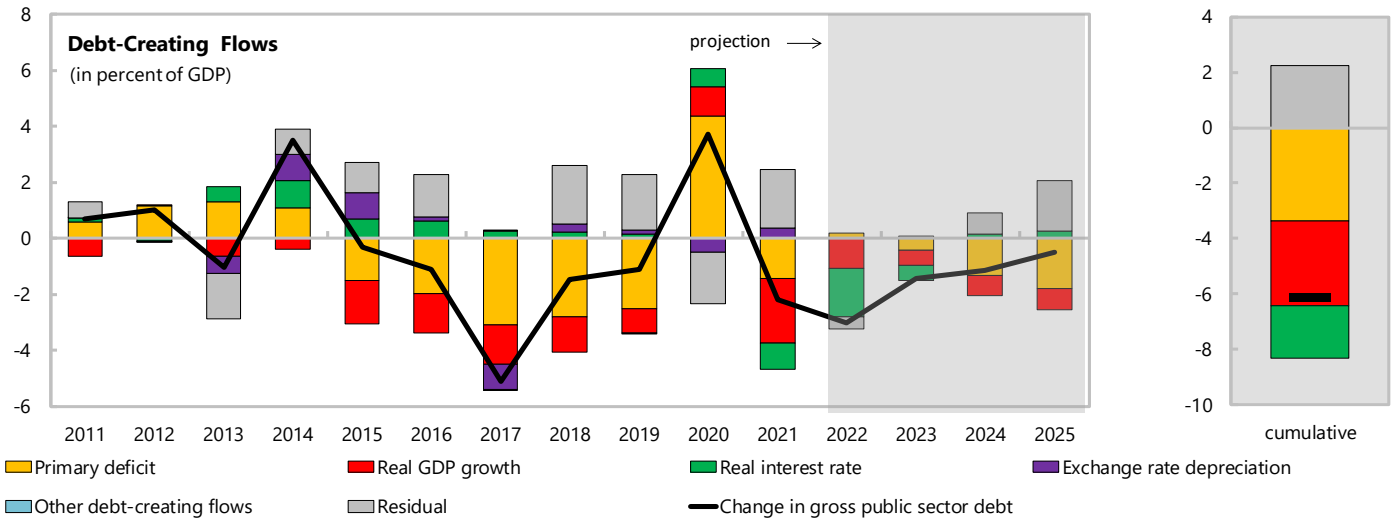
Sovereign Spreads

Bond Spread (bp) 3/	491
5Y CDS (bp)	n.a.

Ratings	Foreign	Local
Moody's	B3	B3
S&Ps	B	B
Fitch	n.a.	n.a.

Contribution to Changes in Public Debt

	Actual			Projections					
	2011-2019	2020	2021	2022	2023	2024	2025	cumulative	debt-stabilizing primary balance [9/]
Change in gross public sector debt	-0,5	3,7	-2,2	-3,0	-1,4	-1,1	-0,5	-6,1	
Identified debt-creating flows	-1,3	5,5	-4,3	-2,6	-1,5	-1,9	-2,3	-8,3	
Primary deficit	-0,9	4,4	-1,4	0,2	-0,4	-1,3	-1,8	-3,3	-0,5
Primary (noninterest) revenue and grants	40,8	40,7	40,8	40,0	39,8	39,3	38,6	157,8	
Primary (noninterest) expenditure	40,0	45,1	39,4	40,2	39,4	38,0	36,8	154,4	
Automatic debt dynamics [5/]	-0,4	1,2	-2,9	-2,8	-1,1	-0,6	-0,5	-5,0	
Interest rate/growth differential [6/]	-0,5	1,7	-3,2	-2,8	-1,1	-0,6	-0,5	-5,0	
Of which: real interest rate	0,4	0,6	-0,9	-1,7	-0,5	0,1	0,2	-1,9	
Of which: real GDP growth	-0,9	1,0	-2,3	-1,1	-0,5	-0,7	-0,8	-3,1	
Exchange rate depreciation [7/]	0,1	-0,5	0,4	...	...	...	...	...	
Other identified debt-creating flows	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Please specify (1) (e.g., privatization receipts	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Contingent liabilities	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Please specify (2) (e.g., other debt flows) (+	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Residual, including asset changes [8/]	0,7	-1,8	2,1	-0,4	0,1	0,8	1,8	2,2	



1/ Public sector is defined as general government.

2/ Based on available data.

3/ Long-term bond spread over German bonds (bp).

4/ Defined as interest payments divided by debt stock (excluding guarantees) at the end of previous year.

5/ Derived as [r - π(1+g) - g + ae(1+r)]/(1+g+π+gπ) times previous period debt ratio, with r = effective nominal interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

6/ The real interest rate contribution is derived from the numerator in footnote 5 as r - π (1+g) and the real growth contribution as -g.

7/ The exchange rate contribution is derived from the numerator in footnote 5 as ae(1+r).

8/ Includes asset changes and interest revenues (if any). For projections, includes exchange rate changes during the projection period.

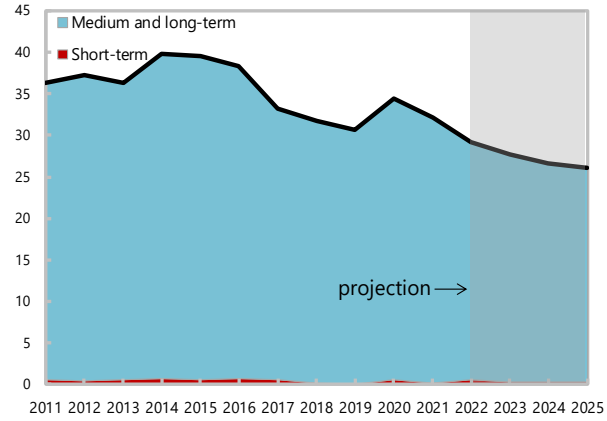
9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

Table 3 BIH Public DSA - Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

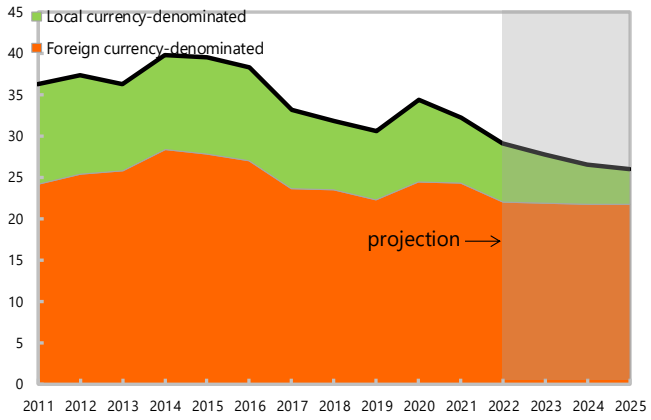
By Maturity

(in percent of GDP)



By Currency

(in percent of GDP)

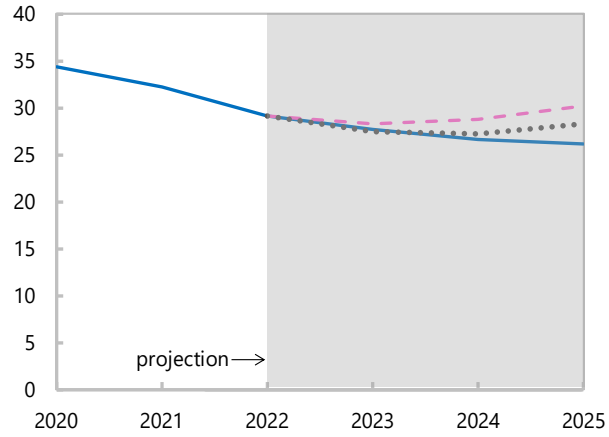


Alternative Scenarios

Baseline Historical Constant Primary Balance

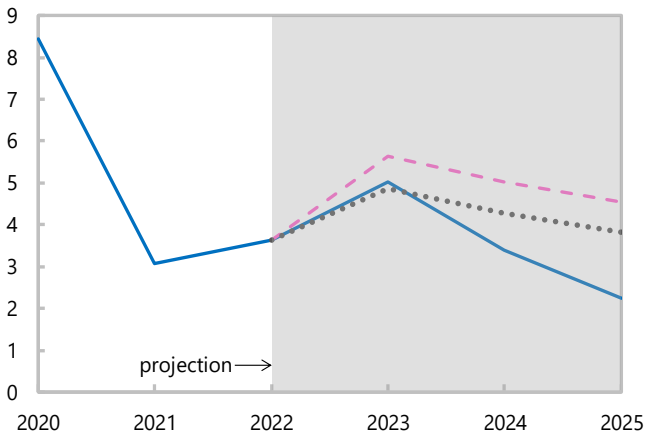
Gross Nominal Public Debt 1/

(in percent of GDP)



Public Gross Financing Needs

(in percent of GDP)



Underlying Assumptions

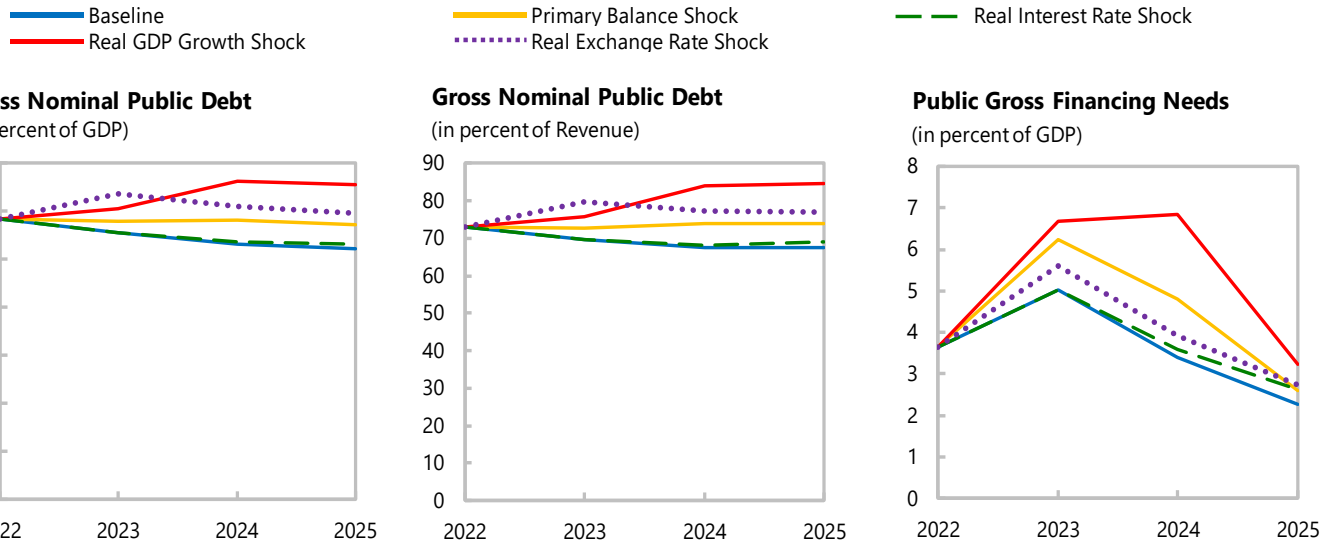
(in percent)

Baseline Scenario	2022	2023	2024	2025
Real GDP growth	3,7	2,0	2,7	3,0
Inflation	7,7	4,3	2,5	2,5
Primary Balance	-0,2	0,4	1,3	1,8
Effective interest rate	2,0	2,4	3,1	3,5
Constant Primary Balance Scenario				
Real GDP growth	3,7	2,0	2,7	3,0
Inflation	7,7	4,3	2,5	2,5
Primary Balance	-0,2	-0,2	-0,2	-0,2
Effective interest rate	2,0	2,4	3,1	3,6

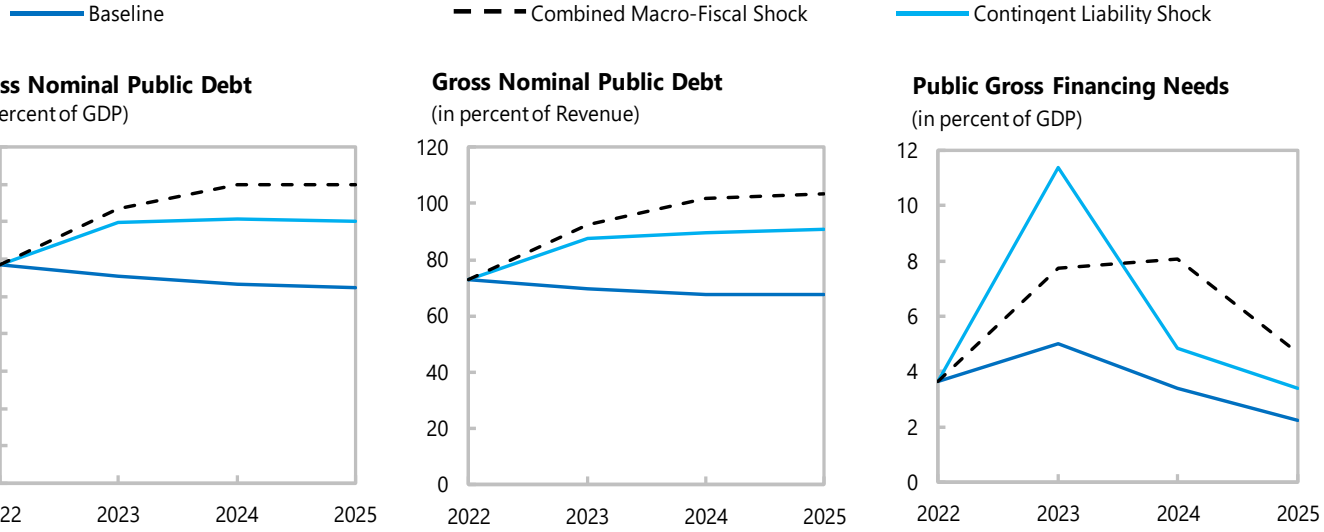
Historical Scenario	2022	2023	2024	2025
Real GDP growth	3,7	2,6	2,6	2,6
Inflation	7,7	4,3	2,5	2,5
Primary Balance	-0,2	0,5	0,5	0,5
Effective interest rate	2,0	2,4	3,5	4,3

Table 4. BIH Public DSA - Stress Tests

Macro-Fiscal Stress Tests



Additional Stress Tests



Underlying Assumptions

(in percent)

Primary Balance Shock	2022	2023	2024	2025
Real GDP growth	3,7	2,0	2,7	3,0
Inflation	7,7	4,3	2,5	2,5
Primary balance	-0,2	-0,8	0,1	1,8
Effective interest rate	2,0	2,4	3,3	3,8
Real Interest Rate Shock				
Real GDP growth	3,7	2,0	2,7	3,0
Inflation	7,7	4,3	2,5	2,5
Primary balance	-0,2	0,4	1,3	1,8
Effective interest rate	2,0	2,4	3,8	4,8
Combined Shock				
Real GDP growth	3,7	-0,9	-0,2	3,0
Inflation	7,7	3,6	1,7	2,5
Primary balance	-0,2	-1,0	-1,5	1,8
Effective interest rate	2,0	2,9	4,0	5,2

Real GDP Growth Shock	2022	2023	2024	2025
Real GDP growth	3,7	-0,9	-0,2	3,0
Inflation	7,7	3,6	1,7	2,5
Primary balance	-0,2	-1,0	-1,5	1,8
Effective interest rate	2,0	2,4	3,3	4,0
Real Exchange Rate Shock				
Real GDP growth	3,7	2,0	2,7	3,0
Inflation	7,7	11,8	2,5	2,5
Primary balance	-0,2	0,4	1,3	1,8
Effective interest rate	2,0	2,9	3,0	3,5
Contingent Liability Shock				
Real GDP growth	3,7	-0,9	-0,2	3,0
Inflation	7,7	3,6	1,7	2,5
Primary balance	-0,2	-5,6	1,3	1,8
Effective interest rate	2,0	2,8	4,1	4,5

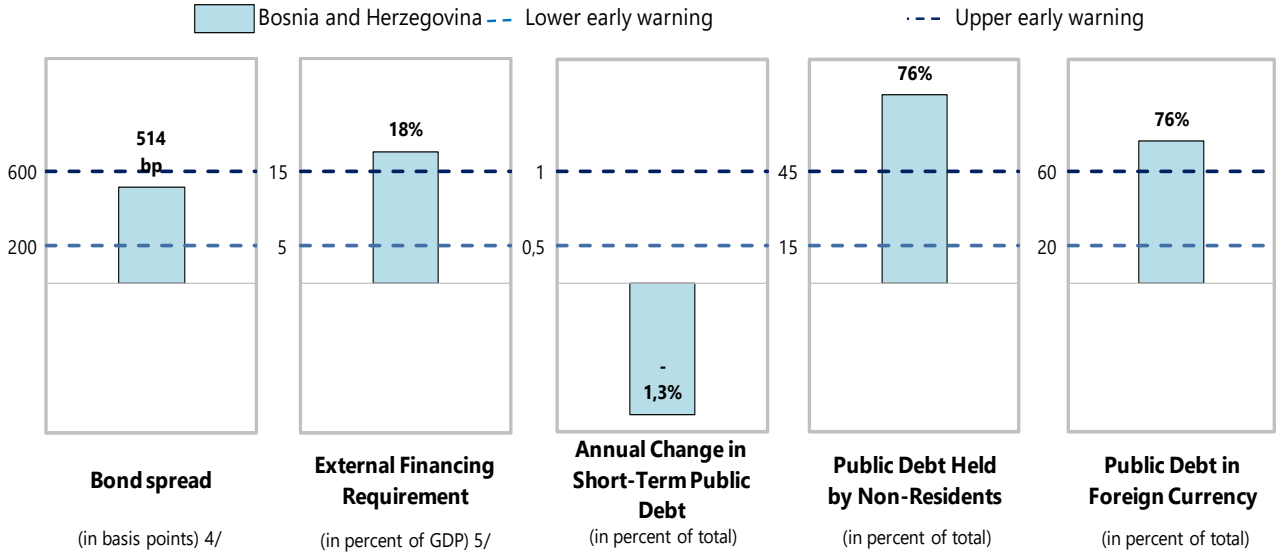
Table 5. BIH Public DSA Risk Assessment

Heat Map

Debt level 1/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability shock
Gross financing needs 2/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability Shock
Debt profile 3/	Market Perception	External Financing Requirements	Change in the Share of Short-Term Debt	Public Debt Held by Non-Residents	Foreign Currency Debt

Debt Profile Vulnerabilities

(Indicators vis-à-vis risk assessment benchmarks, in 2021)



1/ The cell is highlighted in green if debt burden benchmark of 70% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant.

2/ The cell is highlighted in green if gross financing needs benchmark of 15% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant.

3/ The cell is highlighted in green if country value is less than the lower risk-assessment benchmark, red if country value exceeds the upper risk-assessment benchmark, yellow if country value is between the lower and upper risk-assessment benchmarks. If data are unavailable or indicator is not relevant, cell is white.
Lower and upper risk-assessment benchmarks are:

200 and 600 basis points for bond spreads; 5 and 15 percent of GDP for external financing requirement; 0,5 and 1 percent for change in the share of short-term debt; 15 and 45 percent for the public debt held by non-residents; and 20 and 60 percent for the share of foreign-currency denominated debt.

4/ Long-term bond spread over German bonds (bp), an average over the last 3 months, 05-nov-22 through 03-feb-23.

5/ External financing requirement is defined as the sum of current account deficit, amortization of medium and long-term total external debt, and short-term total external debt at the end of previous period.