

ANNEX 1

SUSTAINABILITY OF GENERAL GOVERNMENT DEBT

Lithuania's general government deficit and debt are set to increase substantially this year as a result of economic deterioration caused by the COVID-19 pandemic and fiscal measures put in place in a bid to mitigate its impact. Given the prevailing uncertainty over the spread of the pandemic and its duration as well as the potential scale of fiscal response, the state of public finances in the upcoming years may also worsen to a greater extent than currently expected. All of this leads to higher risks to debt sustainability. Public debt can be regarded as sustainable when a country is able to meet its debt obligations and fulfil its responsibilities towards the public at any point of time without solvency or liquidity challenges.³⁰ One of the methods for analysing debt sustainability is an assessment of whether the debt-to-GDP ratio will stabilise during the forecasting horizon under the baseline (the most likely) scenario of macroeconomic development as well as under various risk scenarios. The debt sustainability analysis has shown that the debt-to-GDP ratio should stabilise in the longer term despite this year's surge in debt. However, the debt ratio will increase over the projection horizon, should the adverse scenarios materialise (e.g. in case of a larger-than-expected rise in interest rates, slower-than-projected economic growth or a larger-than-anticipated deficit). This would in turn jeopardise debt sustainability. In view of this, it is crucial to adhere to fiscal rules, which would contain the deficit growth, and pursue fiscal measures aimed at strengthening economic fundamentals in order to ensure debt sustainability. In the long term (beyond 2025), the factors important for fiscal sustainability will include long-term changes, such as the worsening demographics, ageing population, slowdown in potential economic growth as well as various challenges related thereto.

The evolution of the debt-to-GDP ratio each year depends on three key factors: the average interest rate charged on government debt, the nominal GDP growth and the primary general government balance.³¹ The debt-to-GDP ratio may grow at a very rapid pace when interest rates exceed the rate of economic growth and the government does not generate sufficient primary surpluses to offset this impact. In addition to the baseline scenario³², the following three alternative scenarios have been selected to assess debt sustainability:

- 1) a scenario of **economic growth shock**, if the economic growth in the upcoming years turns out to be slower than expected;³³
- 2) a scenario of **primary balance shock**, which shows a potential effect of no fiscal consolidation and persistence of a larger deficit;³⁴
- 3) a scenario of **interest rate shock**, if the borrowing cost rises to a greater extent.³⁵

³⁰ Bouabdallah, O., Checherita-Westphal, C., Warmedinger, T., De Stefani, R., Drudi, F., Setzer R. and Westphal, A., 2019: Debt sustainability analysis for euro area sovereigns: a methodological framework. ECB Occasional Paper Series No 185 / April 2017.

³¹ $\Delta d_t = \left(\frac{i_t - g_t}{1 + g_t}\right) * d_{t-1} - pb_t + dda_t$, where d represents the debt-to-GDP ratio, i – the nominal interest rate, g – the nominal economic growth rate, pb – the primary balance, and dda – the deficit-debt adjustment. $\left(\frac{i_t - g_t}{1 + g_t}\right) * d_{t-1}$ stands for the interest rate-growth rate differential, also referred to as a snowball effect. The primary balance is the general government balance net of interest payments. The deficit-debt adjustment is a residual comprising factors that affect debt but are not included in the balance. In Lithuania, this factor has recently been mostly related to debt refinancing, where the country *ex ante* issues new debt to raise money for the redemption of a larger bond issue (the year of borrowing does not coincide with the year of debt repayment).

³² The baseline scenario assumes that the dynamic of the economy and public finances in 2020–2022 will match the Bank of Lithuania's September forecasts, and, starting from 2023, the average rate of nominal economic growth will reach 4.1%, the average interest rate charged on debt will stand at 1.5%, while the primary deficit will be 1.1%. Over the past 10 years, these indicators stood, on average, at 6.1%, 4.2% and 0.6% respectively.

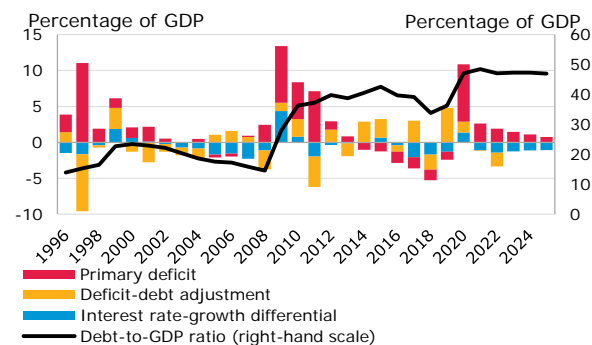
³³ The growth shock scenario assumes that the real GDP will grow by an average of 0.4% in 2021–2022 (the growth rate has been reduced by half of historical standard deviation as compared to the baseline scenario), while the growth rate will match the dynamics set forth for the subsequent years in the baseline scenario. Under this scenario, the primary deficit will, on average, stand at 2.7%, while the average interest rate will be 1.7% from 2021 and beyond.

³⁴ The primary balance shock scenario assumes that the primary deficit will, on average, be 2.9% as of 2021 (higher by half of historical standard deviation). Economic growth will match that envisaged in the baseline scenario, while the interest rate will, on average, reach 1.7%.

³⁵ The interest rate shock scenario assumes an increase of 2.8 percentage points (higher by 1.5 of historical standard deviation) in the interest rate on refinancing loans as of 2021. Even though this shock is more substantial compared to other scenarios, the average interest rate charged on debt would nonetheless remain below the past 10-year average under this scenario.

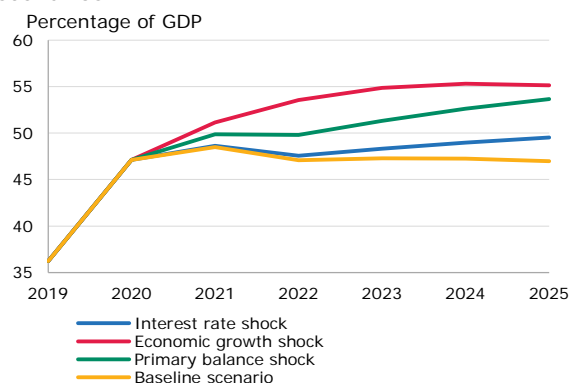
Debt dynamics are sensitive to the developments of the economy, primary balance and interest rates.

Chart A. Breakdown of debt under the baseline scenario



Sources: Statistics Lithuania, Ministry of Finance and Bank of Lithuania calculations.

Chart B. Debt projections under alternative scenarios



Sources: Statistics Lithuania, Ministry of Finance and Bank of Lithuania calculations.

Should the baseline scenario materialise, the debt-to-GDP ratio would increase to 47–49% in 2020–2021 and remain rather stable in the subsequent years (up until 2025). The primary deficit would have a magnifying effect on the debt ratio, which, however, would be offset by a negative interest rate-growth differential, implying that the projected rate of economic growth would exceed the average interest rate on government debt (see Chart A). The assumption of a relatively low interest rate in the baseline scenario is underpinned by the actual level of interest rates (the debt has been refinanced at relatively low interest rates in recent years) and the ECB’s forward guidance projecting a low interest rate environment in the near term. The baseline scenario also assumes compliance with fiscal rules and movement towards the medium-term objective, i.e. the structural balance of 1% during the forecasting horizon, which is set to contain the deficit growth. Considering the historical data, such fiscal consolidation should be genuinely attainable.

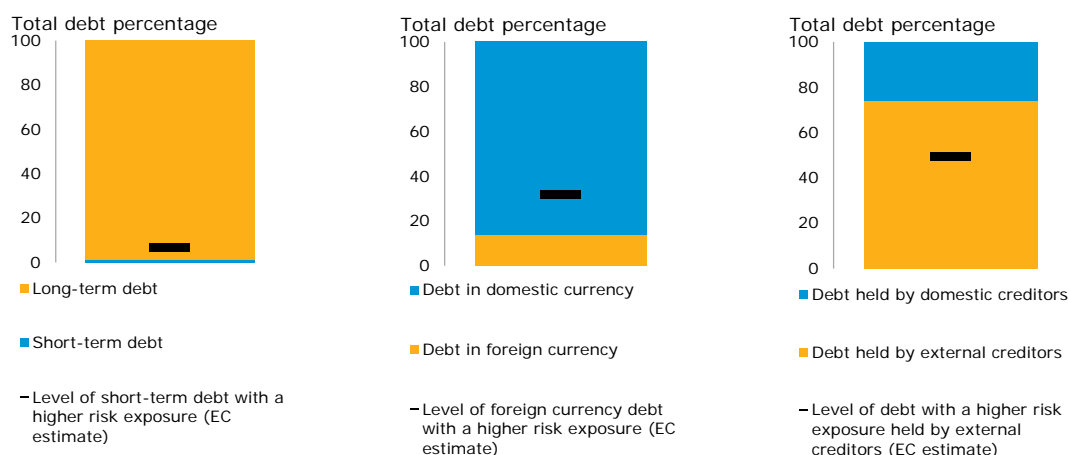
Alternative projections show that debt dynamics might be unstable if various risk scenarios were to materialise (see Chart B). The baseline scenario includes an important debt stabiliser, i.e. the assumption of compliance with fiscal discipline and the narrowing deficit throughout the projection horizon. The primary balance shock scenario shows that the debt ratio will not stabilise in case the government plans larger deficits. An additional shock to economic growth would also lead to a larger increase in debt, as can be seen from the growth shock scenario. For instance, should the economic fallout from the pandemic last longer and economic activity remain depressed over the next few years, the debt ratio would increase at a more rapid pace, yet would embark on a stabilisation phase along with the improving economic situation. GDP growth is one of the key factors reducing the debt-to-GDP ratio, and it is therefore important to make sure that the fiscal measures adopted by the government facilitate a more rapid economic recovery. Under the baseline scenario, the growth of debt-to-GDP ratio is set to be constrained by the envisaged negative interest rate-growth differential. This positive backdrop may induce governments to loosen their efforts, as the debt-to-GDP ratio in this case will decrease even if the deficit is regularly maintained. Nonetheless, studies show that such periods should be treated with sufficient caution. Mauro and Zhou (2019)³⁶ have noted a historically frequent occurrence of sudden spikes in interest rates after prolonged periods of a low interest environment, which lead to a significant increase in funding costs. Debt refinancing at a higher interest rate than envisaged in the baseline scenario would also trigger growth in the debt-to-GDP ratio throughout the projection horizon (the interest rate shock scenario). It should be noted that the shocks discussed herein may materialise

³⁶ Mauro, P., Zhou, J. 2020: $r - g < 0$: Can We Sleep More Soundly?, IMF Working Paper No. 20/52, IMF.

simultaneously and lead to a more rapid debt growth, but the results of shocks have not been cumulated. Given the interdependence between factors, feedback effects should also be taken into account.

A larger share of debt held by non-residents is the only factor implying higher vulnerability.

Chart C. Debt decomposition in Q1 2020



Sources: Statistics Lithuania, EC and Bank of Lithuania calculations.

The assessment of debt and fiscal sustainability should not be limited to changes in the volume of debt, as it should also include other indicators signalling potential debt vulnerabilities. One of the major factors in this case concerns various aspects of the government debt structure (EC, 2020).²⁹ The risks to debt sustainability are considered lower if a larger share of debt is denominated in national currency (lower exposure to currency rate fluctuations), held by residents (lower exposure to capital outflows), issued at fixed interest rates and with a longer maturity (lower exposure to debt refinancing). As shown in Chart C, the bulk of Lithuania's debt is currently denominated in euro, almost the entire debt has been issued at fixed interest rates, while the share of short-term debt is small, which makes the country's debt more resilient to potential shocks. Hence the only indicator showing a higher level of vulnerability is its relatively large share held by non-residents (75%). Existing contingent liabilities³⁷ and the factors showing economic imbalances, in particular those related to the stability of the financial and external sectors, are also important for sustainability which is affected by these factors, given that sovereign debt crises are often related to banking crises (which lead to a substantial increase in deficits due to the state aid granted to the banking sector and magnify sovereign credit risks) as well as fluctuations in capital flows (a sudden capital outflow leads to a more limited access to borrowing). Therefore, the assessment of debt sustainability has to include monitoring of the economic imbalances triggering a rise in risk premia and the ensuing funding challenges, as well as (once they materialise) lead to a higher deficit and, consequently, higher borrowing needs. The majority of Lithuania's economic and financial indicators did not point to any larger imbalances before the onset of the pandemic.³⁸

³⁷ These are the liabilities that are excluded from the general government deficit or debt, but may arise depending on the outcome of a specific event (e.g. provision of state guarantees).

³⁸ EC, 2020: Debt Sustainability Monitor 2019 ([online source](#)).