



საქართველოს ეროვნული ბანკი
National Bank of Georgia

Macroeconomic Scenarios for IFRS 9

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Within the International Financial Reporting Standards (IFRS9) framework, credit risk assessments should incorporate forward-looking analysis. In particular, when assessing expected credit losses, the analysis of macroeconomic and financial factors, expected risks and dynamics should all be taken into account. The National Bank of Georgia (NBG) believes this amendment will facilitate timely recognition of credit risks and will therefore have a positive impact on financial stability.

To ensure transparent, consistent and efficient implementation of IFRS9 by financial institutions, starting from 2018 the NBG regularly publishes macroeconomic and financial forecasts and risk scenarios. The purpose of these scenarios is to provide financial institutions with consistent quantitative estimates of key macroeconomic variables to use them for expected credit loss calculations.

The baseline scenario relies on the NBG's Forecasting and Policy Analysis System (FPAS), while the alternate scenarios are based on a macro-financial model for risk scenario analysis. Additional estimations (satellite models) are used for those variables that are not directly derived from the models. The scenarios also incorporate additional analysis and expert judgement.

The scenarios are based on the data available at the moment of analysis and use the appropriate assumptions on exogenous variables. Scenarios are thus very likely to change when new information becomes available. The dynamics of the variables presented in the scenarios should not be perceived as NBG objectives (e.g., the interest rate, the exchange rate, etc.).

The baseline scenario reflects the most probable state of the economy balanced by risks from both sides, while the alternative scenarios consider different types of shocks (both positive and negative). The shocks are selected based on their relevance to current circumstances and on expert judgement. It should be noted that

although the adverse scenarios reflect negative shocks, these scenarios are less severe than those used in stress testing.

In the current issue of the scenarios, the main drivers of the encompassing macroeconomic variables are the assumptions related to the duration of globally tightened financial conditions and economic activity in Georgia's trade partner countries. In the baseline scenario, the main drivers of economic growth include a rise in the productivity of production factors and an improvement in investment dynamics. According to the upside scenario, the economic activity is more sustainable than in the baseline scenario, which is related to the expansion of the country's transit potential and the expectations of higher economic growth in trading partners. The adverse scenario encompasses the prolongation of tighter financial conditions in developed countries and the risks of possible disruptions of economic activity in trading partner countries. The time horizon of scenarios is characterized by high uncertainty and risks.

The forecast horizon is three-four years and the scenarios are updated twice a year. In case of any significant changes in the macroeconomic environment, the scenarios will be updated more frequently. The scenarios describe the macroeconomic situation in the country and cover all of the main macroeconomic variables. However, not all of these variables are required to be included in the credit loss assessment model. The macroeconomic variables in the scenarios are provided at annual frequency. If an expected credit loss assessment model utilized by a financial institution is based on data of a higher frequency, the variables can be converted into the desired frequency by using linear interpolation. This way annual changes in the selected macroeconomic variables will be evenly distributed over the chosen higher frequency.

For credit loss assessment, 50% probability should be assigned to the baseline scenario, while the upside and adverse scenarios

should both be given 25%-25% probabilities. It should be noted that as Georgia is a small open economy it is highly vulnerable to shocks. Thus, it is essential to consider the non-linear relation between macroeconomic scenarios and credit risk. Therefore, it is necessary to evaluate the expected credit loss for each of the scenarios, and only then weight them with the corresponding probabilities.

It should also be noted that the macro scenarios published by the NBG should not be perceived as the only correct version. Financial institutions may add an alternative scenario and/or change it. However, in such cases it is necessary for the financial institution to understand the relevance of the corresponding scenario and the linkages between the different macroeconomic variables within each scenario. If necessary, the financial institution should be able to prove the reasonability of any changes made to a scenario and/or justify the introduction of new scenarios.

Baseline Scenario

According to the baseline scenario, which reflects the forecasts published in the October 2023 issue of the Monetary Policy Report, the Georgian economy continues to grow at a stable rate this year. The protracted hostilities between Russia and Ukraine have reduced the pace of global economic recovery. The disruption of trade flows in the world due to the existing geopolitical fragmentation, as well as the economic sanctions imposed on Russia by developed countries, initially led to an increase in the prices of energy carriers, food and similar consumer goods. In order to tackle with the globally high inflationary expectations, both developed and emerging and developing countries tightened their monetary policies. Due to the tightened global financial conditions, along with certain trade agreements reached between countries, the pressure on the food prices decreased and prices declined. Nevertheless, as a result of the geopolitical

fragmentation of the markets, the reduction of prices for consumer goods is uneven, which requires different monetary policy responses from the central banks. Consequently, uncertainty regarding the pace of recovery of the global economy still remains.

In the baseline scenario, due to the expansion of production of various agricultural products in a number of countries the prices of food products on the international markets are decreasing, but they still exceed the pre-pandemic level. Due to the failure of the Black Sea Agreement, the initially increased grain prices are now decreasing. In addition, as a result of high levels of harvest recorded in a number of countries this year, a further decrease in the prices of food products is expected in the future. In the recent period, the prices of energy also have a downward trend. Because of the slowdown in global economic growth, further reductions in energy prices are expected. However, with further reductions in oil production by OPEC and the conflict in the Middle East, the risks of another rise in oil prices have increased.

According to the baseline scenario, the prolongation of the Russia-Ukraine war worsened the forecasts for the pace of global economic recovery in 2023-2024. Particularly, the forecasts have worsened for the European countries, which is due to the tightening of financial conditions in response to globally increased inflation. The world's leading central banks, such as the US Federal Reserve System (Fed) and the European Central Bank (ECB), have significantly tightened monetary policy by sharply increasing interest rates and terminating the asset purchase programs. The monetary and fiscal policies of developed countries, which provided unprecedented support to the economy during the pandemic, are now pushing aggregate demand down, thus, easing inflationary pressures. As inflation has already taken a downward trajectory globally, a significant tightening of global financial conditions is unlikely, although it will remain tightened for a relatively long time. Moreover, additional fiscal consolidation is expected starting from next year to replenish the buffers

spent during the pandemic. Consequently, the expected fiscal consolidation and the relatively long maintenance of tighter financial conditions will significantly affect the expectations of the fast recovery of the economy.

In the baseline scenario, the recovery of economic activity in Georgia's trading partner countries is uneven in 2023-2024. Following the normalization of trade, migration and financial inflows from Russia next year, the economic growth rate is expected to slow down in most of the neighboring countries. Although, the increased role of Azerbaijan in the international market will further contribute to the stability of its economy. Consequently, in 2024, its economy will grow steadily, although at a slower pace compared to the current year. In the majority of trading partner countries, inflation was still at a high level this year, although it has acquired a decreasing trajectory. Nevertheless, the inflation in the mentioned countries will remain above the target level next year as well.

Considering the regional risks and the deteriorated competitiveness as a result of the strengthened national currency, the deepening of the current account deficit in the country is expected. Taking into account the expected normalization of remittance flows in the subsequent period, this creates a depreciation pressure on the national currency. However, in 2023-2024, in the background of the implemented, as well as planned infrastructure projects to increase the transit potential of Georgia, an increase in cargo flows and expansion of the transit potential in the country are expected. Considering the above, no significant changes in the nominal exchange rate of the GEL, both effective and against the US dollar, are observed in the medium term (see Figure 3).

According to the baseline scenario, economic activity is expected to grow by 6 percent in 2023 (see Figure 2). The main driver of economic growth is a faster than expected recovery of the country's economic potential, which is stimulated by the increased investments and productivity of production factors in the current

period. In addition, the slowdown of economic growth compared to the previous year is caused by the relative weakening of external demand, which is due to the expected delay in economic growth in trading partners and the deterioration of the country's competitiveness against the background of the strengthened exchange rate of the GEL. In the following years, against the background of diminishing migration flows and gradual normalization of monetary policy, Georgia's economy will grow close to its potential level. With the maintenance of a stable macroeconomic environment in the country, the unemployment level is gradually decreasing.

In the baseline scenario, in the current year, inflation will remain below the target, which will be largely due to the fall in the prices of energy carriers and food products in the international markets, appreciation of the domestic currency and the tightening of monetary policy (see Figure 1). It should be noted that, despite gradual decline, domestic inflation remains at a high level, which is mainly due to the increase in prices in the service sector. At the current stage, the risks of growth of imported inflation have also been highlighted, which can be explained by increased inflationary expectations in trading partner countries. Against the background of the expected normalization of external financial and migration inflows, the effects of a strengthened exchange rate and strong demand on inflation will moderate, which will help bring inflation closer to the target level. As a result of the above, monetary policy will exit the tightened state at a slow pace and the policy rate will approach the neutral level - currently estimated at 7 percent - in the medium term by small steps (see Figure 4).

According to the baseline scenario, in the current year, real estate prices expressed in GEL will increase compared to the 2022 average level. As the national currency remains appreciated real estate prices expressed in US dollars increase even more. At the beginning of the Russia-Ukraine war the prices of construction materials increased, which was reflected in the rising cost of the buildings.

However, against the background of the slowdown of global economic activity and the tightening of financial conditions, the prices of construction materials started to decline. As the geopolitical situation stabilizes, the external demand for real estate will be substituted by domestic demand, making the real estate price growth proportionate to the nominal economic growth in the medium term.

Due to the stable economic growth and low level of inflation in the country, the risk premium continues to decrease. However, considering the high share of imported inflation, the increase in trading costs due to the strengthening of the US dollar on international markets, and the tightening of global financial conditions, the vulnerability of Georgia's economy to external factors remains noteworthy. Subsequently, the country's sovereign risk premium will return to the pre-pandemic level slowly over the forecast horizon.

Uncertainty remains around the baseline scenario. In particular, the pace of economic recovery in the coming years will significantly depend on the pace of economic growth and the duration of tightened financial conditions in the world's leading, as well as Georgia's trading partner countries. The above-mentioned factors have a significant influence on the sentiment of the global financial markets and increase the pressure stemming from the external sector in Georgia. The following alternative scenarios consider these sources of uncertainty and discuss the possible alternative developments of events.

Alternative Scenarios

In contrast to the baseline scenario, which is balanced by risks from both sides, the alternative scenarios examine various exogenous shocks that are chosen based on their relevance to current circumstances and expert judgement. In particular, the upside scenario discusses the reduction of global inflationary pressures and the

expansion of Georgia's trade potential, while the downside scenario focuses on the prolongation of the tightened global financial conditions and a significant reduction in external demand. It should also be noted that the alternative scenarios do not consider risks associated with fiscal and/or other macroeconomic policies.

Upside Scenario

The threat of a large-scale food crisis as a result of the Russia-Ukraine war emphasized the importance of the development of agricultural sectors. As a result of the increase in investment in this area, production has increased significantly and the efficiency of the production process has improved, which has significantly reduced the prices of food products globally. Additionally, establishment of new trade relations among countries streamlined trade flows and increased trade turnover. In the upside scenario, the reduction of global supply disruptions and the stabilization of commodity prices on international markets happen faster than in the baseline scenario. Along with the above-mentioned factors, globally tightened monetary policy also plays an important role in this. A faster-than-expected decline in global inflation will reduce the need for central banks to maintain a tight monetary policy regime, thus easing global financial conditions and lowering borrowing costs. This will improve the pace of recovery of global economic activity.

In the upside scenario, due to a less inflationary environment compared to the baseline scenario, the US Federal Reserve System and the European Central Bank exit the tight monetary policy regime relatively quickly. Similar dynamics can be observed in emerging and developing economies, however, due to the geopolitical fragmentation of markets as a result of the Russia-Ukraine war, the full effect of the tightened monetary policy is being reflected unevenly and at a slower pace compared to developed countries. Overall, the risks of a

global recession are significantly reduced and the gradual increase in foreign direct investment from developed countries improves the pace of economic recovery in emerging and developing countries.

Based on the upside scenario, the geopolitical pressure due to the Russia-Ukraine war stabilizes faster. The reduction of regional risks will improve the market sentiment. As a result, economic activity as well as trade and investment flows will be maintained at the current level and in some cases will increase in the majority of Georgia's trading partner countries. Consequently, in the case of Georgia, external demand will continue to be strong, which will boost economic activity. Considering the current geopolitical situation and the geographical location of Georgia, Georgia is strengthening its transit role in the region and is able to significantly increase the trade flows. The growing role of Georgia in the region becomes a pretext for attracting new foreign investments in the country, which will support a slight strengthening of the nominal exchange rate, both effective and against the US dollar. The growth and diversification of trade will ensure macroeconomic stability and improve future growth forecasts. This is reflected in a more rapid reduction of Georgia's sovereign risk premium compared to the baseline scenario.

As a result of the increase in external demand due to the recovery of economic activity in trading partner countries, along with the growth of Georgia's trade potential, Georgia's economy is growing at a higher rate compared to the baseline scenario. Following the utilization of transit and production potentials, the economic growth rate will be higher than potential level in 2024 and will stabilize around 5% in the medium-term. As the pace of economic growth exceed its potential, the unemployment level in the country is decreasing faster compared to the baseline scenario. A reduction in unemployment will increase spending of both companies and households, and generate inflationary pressures, which will be largely neutralized by improvements in economic growth potential. In addition, the inflationary pressure resulting

from the growth of external demand will be largely offset next year by the expected strengthening of the domestic currency and the increase in trade potential. Considering the stable macroeconomic environment in the country and the recovery of the global economic activity, the monetary policy exits the tightened state faster, compared to the baseline scenario. Considering the sustainable growth of the economy and improved expectations, the growth of real estate prices expressed in GEL is slightly higher than in the baseline scenario over the forecast horizon.

Adverse Scenario

According to the adverse scenario, the prolongation of the Russia-Ukraine war will lead to the introduction of additional sanctions on Russia, which will hinder trade and financial flows and prolong geopolitical fragmentation. These circumstances raise the risks of high inflationary expectations. In addition, as a result of the decrease in oil supply, the increase in the prices of energy resources creates pressure on the production, which leads to a decrease in global economic activity and increases inflation. In response to globally increased inflationary expectations, monetary policy remains in a tighter state longer and in some countries requires additional tightening. In 2024, the Fed and the ECB cut interest rates at a slower pace than in the baseline scenario. The highly contractionary effect of the monetary policy creates significant pressure on aggregate demand. This significantly increases the risks of stagflation in both advanced as well as relatively less developed countries.

In the adverse scenario, a prolongation of tight financial conditions worsens expectations, leading to a reassessment of risks by investors in emerging and developing market economies. This causes capital outflows and increases in external debt burden in the mentioned countries, including Georgia's trading partners. As a result, their sovereign risk premium rises significantly and local currencies depreciate.

The uncertainty related to the geopolitical situation in the mentioned countries has a negative effect on the market sentiment, which reduces their tourist and trade flows, and worsens economic growth expectations.

Based on the adverse scenario, the risks arising in the external sector of Georgia will be further aggravated by the existing trade relations with Russia, which, with the imposition of additional sanctions, will further hinder the trade circulation in Georgia. In contrast to the baseline scenario, considering the mentioned risks in the trading partner countries and Georgia's high dependence on the external sector, the sovereign risk premium of Georgia will increase in 2024 and will start to decrease only from 2025. As a result of the deteriorating external balance, globally tightened financial conditions and increased risks of capital outflows, the exchange rate is under depreciation pressure. Consequently, the national currency is depreciating against most of the trading partners' currencies, including the US dollar.

In particular, the nominal exchange rate of the GEL against the US dollar will depreciate in 2024 and will begin to strengthen in 2026 following the recovery of the economy. The nominal effective exchange rate is characterized by relatively less fluctuations, as global trends also affect the currencies of Georgia's trading partner countries, however, on average, its depreciation is also expected.

According to the adverse scenario, all of this will have a negative impact on Georgia's economic activity and, in the background of prolonged uncertainty with the geopolitical situation, will worsen market sentiment. As a result of the decrease in external demand and the existing risks in the region, the uncertainty regarding the growth rate of the Georgian economy is increasing. Against the possible disruptions of economic activity in some of the main trading partner countries, the trade flow is decreasing, in particular, the export volume is significantly

declining, which is reflected in the increase in the current account deficit. In addition, the limited investment activity, as a result of the increased risk in the region, leads to a significant slowdown in the economic activity in 2024. Due to the still high dollarization of loans, the debt burden for foreign currency borrowers is increasing following the depreciation of the GEL and the prolongation of globally tightened financial conditions. This additionally weakens the domestic demand, which will further hinder the economic recovery in the following period. Under these conditions, in 2024, the Georgian economy will grow only slightly and will start to recover from 2025, although it will not return to its potential until 2026.

In the adverse scenario, additional pressure on commodity and oil prices resulting from the Russia-Ukraine war will create an inflationary environment in the country. The disinflationary effect of weak demand will partially mitigate this to some extent. The slowdown in the inflow of remittances to the country and the prolonged tightening of global financial conditions lead to the depreciation of the GEL exchange rate, which aggravates the inflationary pressure coming from the external sector in Georgia. As a result, in 2024, inflation will reach a higher level compared to the target and will approach the target rate only in the end of 2025. In response to inflationary expectations, monetary policy eases at a slower pace than in the baseline scenario, exiting the tightening regime as the shock wears off, and returning to the neutral level only from 2026.

Under the adverse scenario, given deteriorating expectations for future economic growth, weak demand and excess supply, real estate activity slows down, putting downward pressure on real estate prices. However, because of the increased construction costs due to the depreciated national currency, real estate prices expressed in GEL are increasing. In the coming years, following the pace of economic recovery, the growth rate of real estate prices will gradually normalize and will be proportional to the

nominal economic growth.

Overall, due to the risks discussed in the scenario, these circumstances increase the vulnerability of businesses, which are mainly caused by reduced demand and increased operating costs. Firms that are less diversified, and largely depend on the Russian and Ukrainian markets are particularly vulnerable. In the wake of high uncertainty, deteriorating

financial conditions and, in some cases, closures of businesses, unemployment is rising in the country. All of the above will make it harder for households and companies to service their debt, which will lead to an increase in credit risk. This will have a negative impact on the stability of local financial system. If the impact on the balance sheets of financial institutions turns out to be substantial, the economic recovery will be hindered even further.

Summary of Macroeconomic Scenarios

Scenario	Baseline	Upside (Improved International Environment)	Adverse (Protracted Recovery of the Global Economy)
Fed Funds Rate	2023*: +0.0 pp (compared to the current level) 2024: -0.75 pp 2025: -1.0 pp 2026: -0.75 pp	2023*: +0.0 pp (compared to the current level) 2024: -1.0 pp 2025: -1.25 pp 2026: -1.0 pp	2023*: +0.0 pp (compared to the current level) 2024: -0.25 pp 2025: -0.75 pp 2026: -1.25 pp
ECB Policy Rate	2023*: +0.0 pp (compared to the current level) 2024: -0.75 pp 2025: -1.0 pp 2026: -0.75 pp	2023*: +0.0 pp (compared to the current level) 2024: -1.0 pp 2025: -1.0 pp 2026: -0.5 pp	2023*: +0.0 pp (compared to the current level) 2024: +0.0 pp 2025: -1.0 pp 2026: -1.0 pp
Change in Country Sovereign Risk Premium**	2023: -0.75 pp (compared to 2022) 2024: +0.0 pp 2025: +0.0 pp 2026: -0.25 pp	2023: -0.75 pp (compared to 2022) 2024: -0.25 pp 2025: +0.0 pp 2026: -0.25 pp	2023: -0.75 pp (compared to 2022) 2024: +0.75 pp 2025: -0.25 pp 2026: -0.5 pp
GEL/USD Nominal Exchange Rate	2023*†: Unchanged 2024†: Unchanged 2025: Unchanged 2026: Unchanged	2023*†: Unchanged 2024†: Appreciation 3% 2025: Appreciation 2% 2026: Unchanged	2023*†: Unchanged 2024†: Depreciation 15% 2025: Unchanged 2026: Appreciation 5%
Nominal Effective Exchange Rate (NEER)	2023*†: Unchanged 2024†: Unchanged 2025: Unchanged 2026: Unchanged	2023*†: Unchanged 2024†: Appreciation 2% 2025: Appreciation 1.5% 2026: Unchanged	2023*†: Unchanged 2024†: Depreciation 10% 2025: Unchanged 2026: Appreciation 3%
Real GDP Growth (YoY)	2023: 6.0% 2024: 5.0% 2025: 4.5% 2026: 5.0%	2023: 6.0% 2024: 6.5% 2025: 5.5% 2026: 5.0%	2023: 6.0% 2024: 3.0% 2025: 4.0% 2026: 5.0%
Change in Unemployment Rate	2023: -0.3 pp 2024: -0.25 pp 2025: +0.0 pp 2026: -0.25 pp	2023: -0.3 pp 2024: -0.5 pp 2025: -0.25 pp 2026: -0.25 pp	2023: -0.3 pp 2024: +1.0 pp 2025: +0.5 pp 2026: -0.5 pp
CPI Inflation (YoY)	2023: 2.7% 2024: 3.6% 2025: 3.1% 2026: 3.0%	2023: 2.7% 2024: 3.25% 2025: 3.0% 2026: 3.0%	2023: 2.7% 2024: 5.0% 2025: 4.0% 2026: 3.0%
Change in Real Estate Prices (expressed in GEL, YoY)	2023: 12.5% 2024: 6.0% 2025: 5.5% 2026: 5.5%	2023: 12.5% 2024: 6.5% 2025: 5.75% 2026: 5.5%	2023: 12.5% 2024: 6.0% 2025: 5.75% 2026: 5.5%
Monetary Policy Rate (%)††	2023*: -0.25 pp (compared to the current level) 2024: -1.0 pp 2025: -1.0 pp 2026: -0.75 pp	2023*: -0.25 pp (compared to the current level) 2024: -2.0 pp 2025: -0.75 pp 2026: +0.0 pp	2023*: -0.25 pp (compared to the current level) 2024: -0.5 pp 2025: -0.75 pp 2026: -1.0 pp

Note: Current levels correspond to the publication date of these scenarios. The numbers represent annual average changes, unless otherwise specified.

* The assumption is made for the remaining period of the year.

** JPMorgan EMBI Global Georgia Sovereign Spread; Source: Bloomberg.

† Average levels prevailing in the two-week period ending on the cut-off date of 14 December 2023.

†† The assumption shows the change over the course of the year.

Appendix

Dynamics of Main Domestic Variables

Figure 1. CPI Inflation (YoY, %)

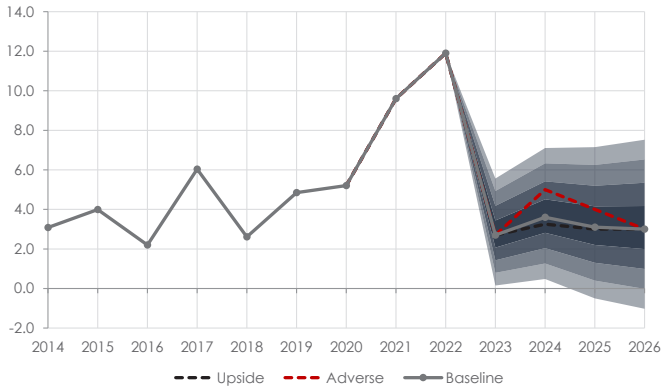


Figure 2. Real GDP Growth (YoY, %)

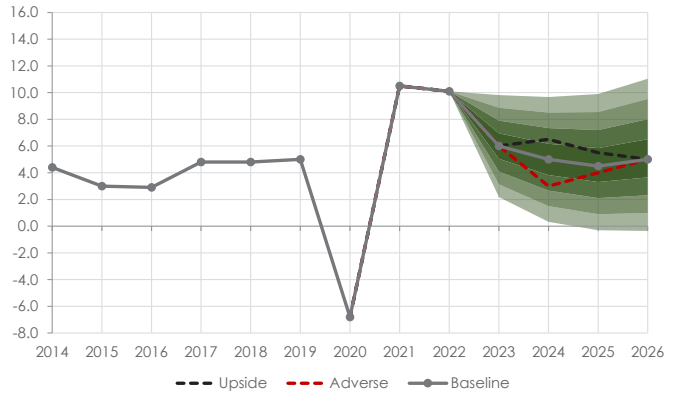
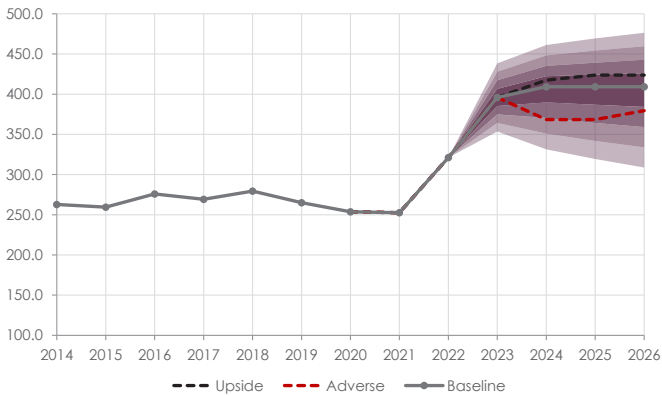
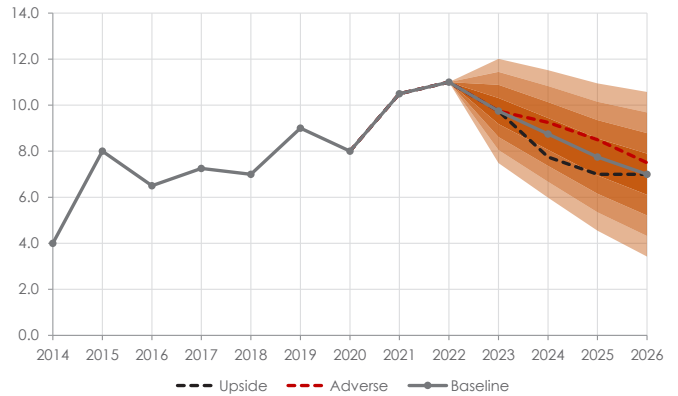


Figure 3. Nominal Effective Exchange Rate, NEER**



** 1995=100; Increase means appreciation

Figure 4. Monetary Policy Rate* (%)



	History												Scenario											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Baseline				Upside				Adverse			
													2023	2024	2025	2026	2023	2024	2025	2026	2023	2024	2025	2026
CPI Inflation (YoY, %)	8.7	-0.9	-0.5	3.1	4.0	2.2	6.0	2.6	4.9	5.2	9.6	11.9	2.7	3.6	3.1	3.0	2.7	3.25	3.0	3.0	2.7	5.0	4.0	3.0
Monetary Policy Rate (%) *	6.75	5.25	3.75	4.0	8.0	6.5	7.25	7.0	9.0	8.0	10.5	11.0	9.75	8.75	7.75	7.0	9.75	7.75	7.0	7.0	9.75	9.25	8.5	7.5
Real GDP Growth (YoY, %)	7.4	6.4	3.6	4.4	3.0	2.9	4.8	4.8	5.0	-6.8	10.5	10.1	6.0	5.0	4.5	5.0	6.0	6.5	5.5	5.0	6.0	3.0	4.0	5.0
Nominal Effective Exchange Rate, NEER (1995=100)	238.4	254.1	254.0	262.9	259.5	275.9	269.3	279.4	265.0	253.8	252.6	321.1	396.0	409.3	409.3	409.3	396.0	417.5	423.8	423.8	396.0	368.4	368.4	379.4

Note: Data is annual average unless otherwise indicated.

The scenarios are based on the latest available data and the corresponding assumptions on exogenous variables. Thus, during each update, as new information becomes available scenarios are expected to change. The dynamics of the variables presented in the scenarios should not be perceived as the target of the National Bank of Georgia (e.g., the interest rate, the exchange rate, etc.).

* The numbers show the end-of-year values.

