



საქართველოს ეროვნული ბანკი
National Bank of Georgia

Macroeconomic Forecast Scenarios for IFRS 9

June

2022

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 estimates provided within these scenarios can be used 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. Forecast scenarios are thus very likely to change when new information becomes available. The dynamics of the variables presented in the forecast 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 the Russia-Ukraine war and the possible actions of the world's leading central banks. The baseline scenario considers domestic demand and partial recovery of tourist flows as leading drivers of economic recovery. According to the Upside scenario, the recovery of the economy is more sustainable than in the baseline scenario, which is related to the development of the country's transit potential and the relatively swift elimination of the supply chain problems in the world. The adverse scenario encompasses pressures coming from tightening financial conditions in developed countries due to rising global inflation expectations and uncertainty over the duration of the Russia-Ukraine war; This is reflected in the reduction of economic activity in the country. The current forecast horizon is distinguished by higher than usual uncertainty and elevated 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 May 2022 issue of the Monetary Policy Report and other relevant up-to-date information, the country is experiencing a high economic activity in 2021. Despite a significant slowdown in the COVID-19 pandemic worldwide, Russia's invasion of Ukraine has created great uncertainty about the pace of the global economic recovery. As a result of the Russia-Ukraine war, as well as economic sanctions imposed on Russia by developed countries, the disruption of trade flows worldwide has led to rising prices for oil products, food and other consumption goods. Furthermore, supply disruptions of intermediate products and materials will lead to loss of production efficiency and reduced productivity. As a result of the rapid changes in the geopolitical situation, the market sentiment has deteriorated and inflation expectations

have increased.

According to the baseline scenario, despite the improved epidemiological situation, the forecast for the pace of recovery of global economic activity in 2022-2023 has worsened due to the new geopolitical shock, which is a result of global trade disruptions caused by Russia's invasion of Ukraine and the subsequent humanitarian crisis in Europe. As Russia is one of the main suppliers of oil, natural gas, non-ferrous metals, and - along with Ukraine - grain, the already observed and further expected delays in the supply of these products have revealed an upward trend in prices globally. At the same time, as a result of increased demand caused by eased monetary policy by the world's leading central banks during the pandemic, accompanied by increased uncertainty about the duration of the abovementioned supply chain disruptions, create inflationary pressures, which lead to significantly higher inflation expectations globally. In response, the world's leading central banks have already begun tightening monetary policy. In response to rising inflation and additional inflation expectations, the United States (US) Federal Reserve System (Fed) continues the gradual reduction of its asset purchase program. Additionally the Fed has increased interest rate several times during the first half of 2022 and intends to continue this trend in the coming years. According to the updated forecast, the European Central Bank (ECB) will increase the monetary policy rate in July, with a further increase expected by the end of the year. These circumstances lead to a tightening of financial conditions, which, along with the disruption of supply chains, puts significant pressure on the developing and emerging market economies with low rates of economic recovery. As a result of the relatively limited opportunities for economic recovery from the pandemic, increased external debt and a deepening current account deficit make these countries more vulnerable to further tightening of global financial conditions.

In the baseline scenario, despite the stabilization of the epidemiological situation, in 2022, the recovery of economic activity in majority of

Georgia's trading partner countries is proceeding at a relatively low pace. At the same time, significant economic downturns are expected in Russia and Ukraine. All this threatens to reduce the trade flow from these countries to Georgia. Therefore, despite the partial recovery of international tourist flows, the improvement of Georgia's current account is expected only from next year due to currently elevated regional risks and the humanitarian crisis in Europe. However, increased foreign exchange inflows in the current period strengthen the exchange rate and help improve expectations, offsetting the effects of declining foreign investment as a result of increased regional risk and tighter global financial conditions. With this in mind, significant changes in the nominal effective exchange rate of GEL in the medium term are not expected (see Figure 3). Over the forecast horizon, the average nominal exchange rate of GEL against the US dollar remains at the current level, although it is characterized by high fluctuations. As a result of the regional crisis and the tightening of global financial conditions, the vulnerability of the economy to external factors has increased, leading to risk reassessments by investors. Consequently, the country's sovereign risk premium will remain at a relatively high level during the current year, and in the medium term will return to the initial level.

According to the baseline scenario, economic activity is expected to grow by 4.5% in 2022 (see Figure 2), which is 0.5 percentage points lower than the previous forecast. This revision of the economic growth forecast is due to the expected decline in foreign investment and the deterioration of net exports. Overall, a high pace of lending significantly contributes to boosting local demand, which is the main driver of economic recovery. Amid the slowdown in economic growth in trading partners, foreign demand remains relatively weak, reflecting only a partial recovery of international tourism flows. Following the diminishing uncertainty over the duration of the regional conflict, external demand is expected to increase significantly from 2023. However, a significant recovery in

international investment flows is not expected, which is related to the anticipated increase of interest rates from the Fed and the ECB. As economic activity improves, employment will also increase. The elimination of the pandemic-related restrictions will boost the recovery of the service sector, leading to an increase in employment. In contrast, a prolonged above the target inflation and further expectations of price increases for primary consumer goods are reflected in rising consumer spending, which puts pressure on wages. Subsequently, only a slight reduction in the unemployment rate is expected.

According to the baseline scenario, in the current year, real estate prices expressed in GEL will increase compared to the 2021 average level. This is a result of the increased foreign demand for real estate at the beginning of the year, which is indicated by the increase in foreign visitors and rental prices. In addition, the increase in the cost of buildings is accompanied by an increase in the price of construction materials. As the geopolitical situation stabilizes, the external demand for real estate will be substituted by domestic demand, thus it is expected that the increase in real estate prices in the medium term will be proportional to the nominal economic growth.

In the baseline scenario, the inflation will remain above the target for the current year, which is mainly due to the sharp rise in prices of energy and food in the international market, as well as an increase in domestic demand (see Figure 1). Against the background of increased uncertainty, the expected fluctuations in the exchange rate and international prices make food prices in Georgia more vulnerable. The rise in food prices is supplemented by increasing inflationary pressures from rising oil, transportation and intermediate production costs. Supply delays in some sectors are expected to last until 2023. Expectations of wage growth in response to the resulting deterioration in living standards are putting additional pressure on prices. As a result of the abovementioned factors and relatively long deviations from the inflation target, short-term inflation expectations have

increased. As these temporary factors diminish, in the background of tightened monetary policy, inflation will begin to decline from the second half of 2022, albeit at a slower pace than the pre-war prediction, and return to the target in the medium term.

In the baseline scenario, monetary policy will remain relatively tight for a relatively long time in response to inflation remaining above the target due to increased domestic demand from increased lending this year, as well as due to inflationary expectations caused by weakening of global supply chains. The pace of exit from stricter monetary policy will depend on the duration of the tightened global financial conditions and the dynamics of inflation expectations. Following the reduction of the abovementioned risks, the monetary policy rate will gradually decrease and approach the neutral level in the medium term (see Figure 4).

The uncertainty persists around the baseline scenario. In particular, the pace of economic recovery in the upcoming years will depend significantly on the duration of the Russia-Ukraine war and the extent of tightened global financial conditions. There is a risk that the tightening of monetary policy in developed countries will accelerate even further, which will have a significant impact on the sentiment of global financial markets. The following alternative scenarios consider the 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 on expert judgement. In particular, the upside scenario considers Georgia's adoption of transit potential and the elimination of global supply chain problems in the short-term, while the

adverse scenario focuses on prolonging of the Russia-Ukraine war and further tightening of global financial conditions. It should also be noted that the alternative scenarios do not consider risks associated with fiscal and/or other macroeconomic policies.

Upside Scenario

According to the upside scenario, active warfare in the Russia-Ukraine war will end faster than in the baseline scenario, the geopolitical situation will stabilize, and regional risks will decrease more rapidly. At the same time, Georgia manages to utilize its transit potential, and restore tourism to pre-pandemic levels. As a result, the Georgian economy is recovering at a higher pace than in the baseline scenario.

According to the optimistic scenario, as the active phase of the Russia-Ukraine war nears its end, issues with global supply disruptions will improve and prices for consumer goods in international markets will stabilize in a relatively shorter period compared to the baseline scenario. Consequently, inflationary pressures in 2023 are negligible and the world's leading central banks choose to pursue less aggressive policies, hence encouraging economic recovery. As a result, in contrast to the baseline scenario, the US Federal Reserve and the European Central Bank will normalize monetary policies by raising interest rates at a slower pace.

This will make financial conditions less tight and lessen the outflow of capital, which will help them maintain the economic recovery rate. As a result of the establishment of new supply chains and trade links, the foreign direct investment will increase in countries with developing and emerging market economies from next year, which will ensure unhindered access to financial resources, improve market sentiment and accelerate the recovery of the economy.

In the upside scenario, Georgia's adoption of

transit potential and the renewal of global economic activity in the coming years will also contribute to the rapid recovery of international trade and tourism flows compared to the baseline scenario. Moreover, as the regional risks subside, the inflow of foreign direct investment will increase, which will improve the current account and strengthen the nominal exchange rate of GEL, both effective and in US dollars. As a result of the improvement in market sentiment, the nominal exchange rate of GEL against the US dollar will appreciate by 3% for the rest of the current year and by an additional 2% next year. Growing demand for GEL denominated assets reduces macroeconomic risks, which, together with the growing role of Georgia as a transit country, is reflected in a more accelerated reduction in the sovereign risk premium compared to the baseline scenario.

According to the upside scenario, as a result of Georgia's development of transit potential and reduction of geopolitical risks, the local economy is recovering at a higher pace than the baseline scenario. Unemployment is also declining in the country along with economic growth. As economic growth follows its potential path, inflationary pressures arise mainly from external factors, which are offset by the strengthening of the exchange rate this year. With the elimination of supply chain problems next year, these external pressures will be completely exhausted. Therefore, inflation is declining faster and monetary policy is exiting the tightened state sooner than in the baseline scenario. As a result of the sustainable recovery of the economy and the improved expectations, on the forecast horizon, the real estate prices in GEL are growing at a higher pace compared to the baseline scenario.

Adverse Scenario

According to the adverse scenario, the Russia-Ukraine war will not end this year and will last longer than the baseline scenario. Due to the prolongation of the war, the already hindered

trade and financial flows this year will carry on next year, which will significantly slow down the recovery of global economic activity in the medium term. The higher than expected reduction in supply potential and prolonged demand-supply mismatches will create more upward pressure on prices, leading to higher global inflation expectations.

According to the adverse scenario, the slowdown in global trade flows and the long-term persistence of uncertainty will lead to high inflation expectations in the coming years. With already acknowledged high levels of inflation in developed countries, the world's leading central banks will tighten monetary policy faster than in the baseline scenario in order to meet additional inflation expectations; this also implies an additional tightening of global financial conditions. In the context of high uncertainty regarding the duration of the war, the abovementioned circumstance is reflected in the reassessment of risks by investors and capital outflows in developing and emerging market economies. Significant financial pressures are emerging in countries in the conflict region, where elevated long-term regional risks and tightening of financial conditions result in a reduction of access to financial resources. Subsequently, this will lead to an increase in external debt and a deterioration of the current account. Overall, in contrast to the baseline scenario, Georgia's sovereign risk premium will reach a higher level in 2022 and will decline relatively slowly in the following years.

In the adverse scenario, the prolongation of the Russia-Ukraine war will significantly hinder the economic recovery of Georgia's trading partners. Uncertainty related to the geopolitical situation and low levels of economic activity have a negative effect on market sentiment, which is why the positive trends observed in international tourism flows and remittances at the beginning of this year are lost. Risks coming from the foreign sector are exacerbated by close trading relations with Russia, which will significantly impede trade in Georgia amid the tightening of the sanctions. Deteriorating

external balances and increased risks create depreciating pressures on the exchange rate. In particular, the nominal exchange rate of GEL against the US dollar will depreciate by 10% in 2022 and by an additional 3% in 2023. As the economic recovery improves, in 2024 the nominal exchange rate against the US dollar will strengthen by 5%. At the same time, the depreciation of the nominal effective exchange rate is relatively moderate, as global trends also negatively affect the currencies of the trading partners.

According to the adverse scenario, as a result of elevated risks in the region and reduced external inflows, there is increased uncertainty about the pace of economic recovery. Due to the similar situation in the major trading partner countries, foreign demand has sharply decreased. Additionally, weak domestic demand and limited investment activity due to deteriorating expectations and increased debt burden are hampering economic recovery. In the face of increased external debt, the ability of the economy to provide fiscal support is declining. Prolonged delays in the recovery of economic capacity are causing significant damage to production potential. In the face of stagnant economic recovery, small economic growth is expected in 2022, with signs of only modest recovery observed from 2023.

In the adverse scenario, the deflationary effect of weak demand is offset by a deterioration in production potential. However, a significant increase in prices of imported products and intermediate production costs due to exchange rate depreciation and, in general, global price increases will create inflationary pressures. At the same time, since inflation in Georgia has long deviated from the target due to the impact of various shocks, and it is expected that increased prices for commodity groups in international

markets will persist, inflation will reach a higher level than in the baseline scenario. The monetary policy will be further tightened to meet the rising inflation expectations in the country. The tightened position will remain for a longer period compared to the baseline scenario. As inflation expectations start declining, monetary policy will begin to normalize and approach the neutral level over the forecast horizon.

Under the adverse scenario, given the deteriorating expectations and weak demand, real estate activity is declining. However, due to the rising prices for construction materials and the depreciation of the national currency, real estate prices in GEL are rising. Prolonged recovery of economic activity may also result in the closure of some businesses because of declining demand and higher operating costs. Firms whose trade relations are heavily reliant on the Russian and Ukrainian markets are more vulnerable in this regard. In the face of increased public debt, the suspension of fiscal support and tightening of financial conditions pose risks to companies' solvency. These risks are exacerbated by the expected currency depreciation and high loan dollarization. Unemployment is also rising due to business closures and the slowdown of recovery in the service sector. Reduced incomes and higher uncertainty will exacerbate households' financial situation as well. Deteriorating living standards will make it harder for households, along with companies, to service their debt. This might lead to a considerable rise in credit risk, which will have a detrimental impact on the financial system. If the impact on the balance sheets of financial institutions is substantial, then the recovery of the economy will be even slower and more uncertain.

Summary of Macroeconomic Forecast Scenarios

Scenario	Baseline	Upside (Improved International Environment)	Adverse (Prolongation of the Russia-Ukraine War)
FED Funds Rate	2022*: +1.65 pp (compared to the current level) 2023: +0.4 pp 2024: -0.4 pp	2022*: +1.0 pp (compared to the current level) 2023: +0.25 pp 2024: -0.25 pp	2022*: +1.85 pp (compared to the current level) 2023: +0.5 pp 2024: -0.5 pp
ECB Policy Rate	2022*: +0.5 pp (compared to the current level) 2023: +0.5 pp 2024: +0.25 pp	2022*: +0.5 pp (compared to the current level) 2023: +0.25 pp 2024: +0.5 pp	2022*: +0.75 pp (compared to the current level) 2023: +0.5 pp 2024: +0.25 pp
Change in Country Sovereign Risk Premium**	2022: +1.4 pp (compared to 2021) 2023: -1.0 pp 2024: -0.5 pp	2022: +0.9 pp (compared to 2021) 2023: -0.5 pp 2024: -0.5 pp	2022: +1.9 pp (compared to 2021) 2023: -0.5 pp 2024: -0.5 pp
GEL/USD Nominal Exchange Rate	2022*†: Unchanged 2023: Unchanged 2024: Unchanged	2022*†: Appreciation 3% 2023: Appreciation 2% 2024: Unchanged	2022*†: Depreciation 10% 2023: Depreciation 3% 2024: Appreciation 5%
Nominal Effective Exchange Rate (NEER)	2022*†: Unchanged 2023: Unchanged 2024: Unchanged	2022*†: Appreciation 2% 2023: Appreciation 1.5% 2024: Unchanged	2022*†: Depreciation 6% 2023: Depreciation 2% 2024: Appreciation 3%
Real GDP Growth (YoY)	2022: 4.5% 2023: 5.0% 2024: 5.5%	2022: 6.0% 2023: 5.5% 2024: 5.0%	2022: 3.0% 2023: 4.0% 2024: 5.5%
Change in Unemployment Rate	2022: -1.1 pp 2023: -1.0 pp 2024: -0.5 pp	2022: -1.6 pp 2023: -1.0 pp 2024: -0.5 pp	2022: -0.1 pp 2023: -0.5 pp 2024: -1.0 pp
CPI Inflation (YoY)	2022: 9.5% 2023: 3.0% 2024: 2.5%	2022: 9.0% 2023: 3.0% 2024: 3.0%	2022: 11.0% 2023: 5.5% 2024: 3.0%
Change in Real Estate Prices (expressed in GEL, YoY)	2022: 8.5% (compared to 2021) 2023: 5.5% 2024: 5.0%	2022: 12.0% (compared to 2021) 2023: 6.0% 2024: 5.5%	2022: 12.5% (compared to 2021) 2023: 7.5% 2024: 5.5%
Monetary Policy Rate (%)††	2022*: -0.5 pp (compared to the current level) 2023: -3.5 pp 2024: -0.5 pp	2022*: -1.0 pp (compared to the current level) 2023: -3.0 pp 2024: -0.5 pp	2022*: +1.0 pp (compared to the current level) 2023: -3.0 pp 2024: -2.5 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 27 June 2022.

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

Appendix

Forecast Dynamics for Main Domestic Variables

Figure 1. CPI Inflation (YoY, %)

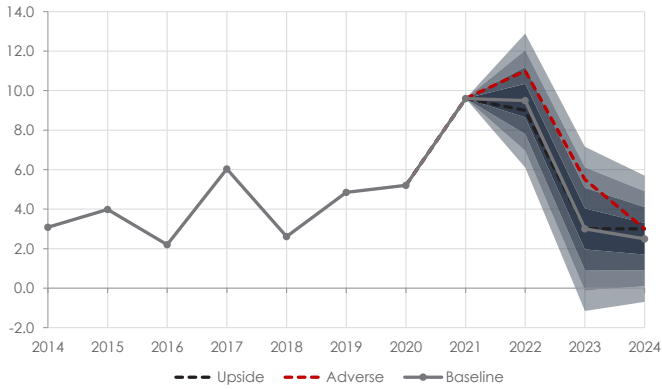


Figure 2. Real GDP Growth (YoY, %)

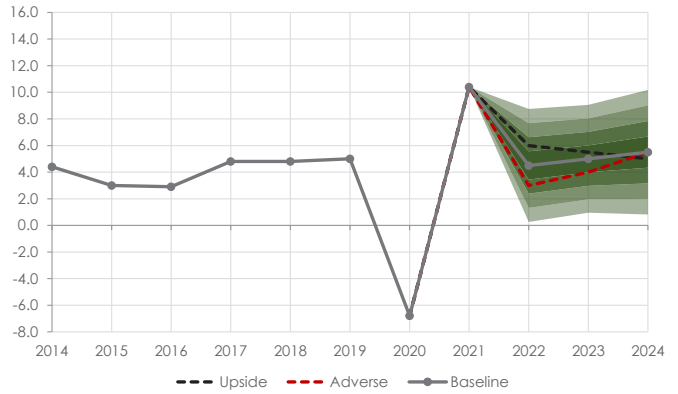
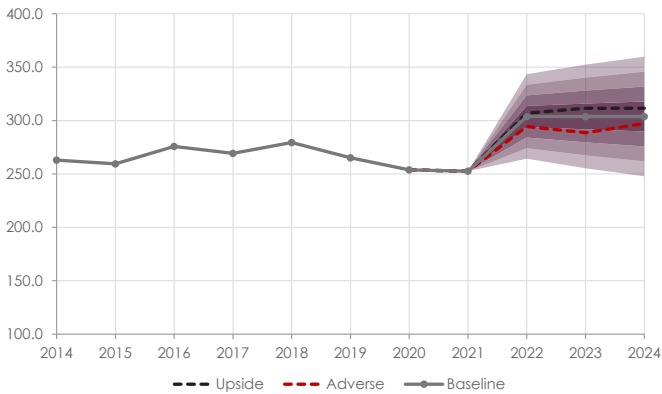
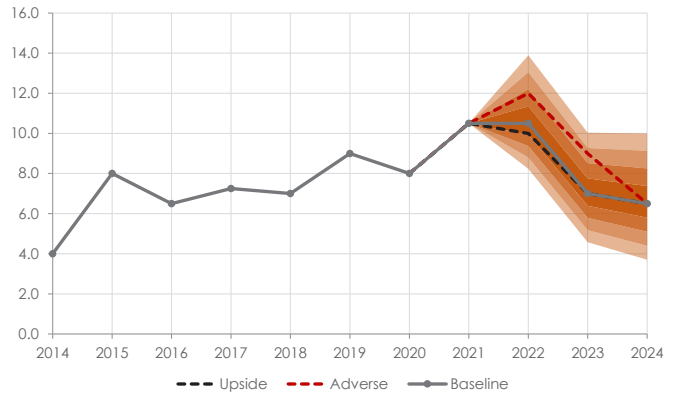


Figure 3. Nominal Effective Exchange Rate, NEER**



** 1995=100; Increase means appreciation

Figure 4. Monetary Policy Rate* (%)



	History											Forecast Scenario								
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Baseline			Upside			Adverse		
												2022	2023	2024	2022	2023	2024	2022	2023	2024
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	9.5	3.0	2.5	9.0	3.0	3.0	11.0	5.5	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	10.5	7.0	6.5	10.0	7.0	6.5	12.0	9.0	6.5
Real GDP Growth (YoY, %)	7.4	6.4	3.6	4.4	3.0	2.9	4.8	4.8	5.0	-6.8	10.4	4.5	5.0	5.5	6.0	5.5	5.0	3.0	4.0	5.5
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	303.8	303.8	303.8	307.0	311.6	311.6	294.4	288.6	297.2

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 forecast 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.

