



საქართველოს ეროვნული ბანკი
National Bank of Georgia

Macroeconomic Forecast 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 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 possible actions of the world's leading central banks and the spread of the COVID-19 pandemic. In the baseline scenario the major driver of economic recovery is domestic demand alongside the expected resumption of international trade and tourism inflows induced by increased global economic activity. According to the upside scenario, the recovery of the economy is more sustainable compared to the baseline scenario, which is achieved thanks to the improvement of market sentiment and high investment activity. The adverse scenario encompasses burden coming from tightening financial conditions in developed countries due to rising global inflation expectations and increased uncertainty over the duration of the pandemic. 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 the October 2021 issue of the Monetary Policy Report and other relevant up-to-date information, the country is experiencing a high economic activity in 2021. Improved COVID-19 management and stricter vaccination requirements in the world are expected to reduce the rate of pandemic spread. This, in turn, leads to an improvement in market sentiment as a result of subdued uncertainty. Moreover, the recovery of global economic activity will also facilitate the gradual improvement in international trade and tourism flows.

According to the baseline scenario, despite the subsequent wave of the COVID-19 pandemic, the recovery of global economic activity in 2021-2022 continues at a high rate, driven by unprecedented scale of fiscal support in

developed countries and increased consumer spending amid improved epidemiological situation. The world's leading central banks continue to pursue a loose monetary policy, which is reflected in reduced interest rates and continuation of the massive asset purchase programs. Increased demand and uncertainty over the duration of supply chain disruptions, induced by rising oil prices, increased transportation costs and a pandemic-related labor supply constraints, are creating inflationary pressures. The Federal Reserve System (Fed) maintains accommodative policy to support economic recovery in the United States (US). However, in response to rising inflation in the US, the Fed has begun tightening its policy by accelerating a gradual reduction in its asset purchase program. Additionally, the expectations arose/emerge that the Fed will tighten monetary policy in 2022 by further reducing the asset purchasing program and raising interest rates. In the following years, the Fed will gradually normalize its monetary policy. Meanwhile, the European Central Bank (ECB) does not intend to increase its policy rate over the next two years. Although like the Fed, it plans to gradually reduce its asset purchase program starting from next year. These circumstances lead to a tightening of global financial conditions, which will negatively impact the developing and emerging market economies with relatively low rates of economic recovery. Increased external debt and worsened current account deficits throughout the pandemic period make these countries more vulnerable to possible tightening of global financial conditions.

In the baseline scenario, as the epidemiological situation stabilizes, the economic activity of Georgia's trading partner countries improves in the current year, which leads to an increase in trade flows and remittances. An improvement in the current account is expected from next year amid a partial recovery of international tourist flows. The reduction of external imbalances facilitates medium term stability of the nominal exchange rate (see Figure 3). The nominal GEL/USD exchange rate will also

remain stable over the forecast horizon. As the economic activity increases and the exchange rate stabilizes, the vulnerability of domestic economy to external factors decreases and the sovereign risk premium remains at its current low level.

According to the baseline scenario, economic activity is expected to grow by 10% in 2021 (see Figure 2), which is 1.5 percentage points higher than the previous forecast. The economic recovery will be mainly driven by the realization of pent-up demand, which is further fueled by fiscal stimulus and credit growth. The export dynamics are also improving. However, external demand is still relatively weak due to only a partial recovery of international tourism inflows. Following the reduction of the pandemic-related uncertainty and the increase in vaccination rates, it is expected that external demand will increase substantially starting from 2022. However, a significant increase in international investment inflows is not expected because of the increased expectations regarding the Fed funds rate hike. Consequently, the domestic demand along with the expected recovery of tourism will be a major driver of the economic growth. As economic activity improves, employment will also increase. However, unemployment will decline at a rather slow pace due to the relatively weaker recovery in services industry compared to other sectors. According to the baseline scenario, real estate prices expressed in GEL will increase in the current year compared to the 2020 average level. This increase is driven by improvements in economic activity and market sentiment. Aside from that, a higher cost of construction materials leads to an increase in the cost of new buildings. In the medium term, the increase in real estate prices will be proportional to nominal economic growth.

In the baseline scenario, the inflation will remain above the target in the current year, which is mainly due to the increase in commodity prices in international markets (see Figure 1). Georgia's high dependence on food imports makes its prices more vulnerable to exchange rate and international price fluctuations.

Rising commodity prices are accompanied by inflationary pressures originating from rising oil prices and transportation costs, as well as supply chain disruptions caused by the pandemic. Due to increased demand, the influence of these factors on inflation are no longer neutralized. Therefore, short-term inflation expectations have increased due to a relatively prolonged deviation from the inflation target. With the exhaustion of temporary factors, under tighter monetary policy conditions, inflation will start declining from the second quarter of 2022 and return to the target in the medium term.

In the baseline scenario, the monetary policy will remain tight relatively longer in response to the inflation remaining above the target and risks related to rising inflation expectations in the current year. The pace of easing of the monetary policy will depend on inflation expectations. It is expected that as inflation expectations dissipate, the monetary policy rate will gradually decline and converge to its 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 spread of the pandemic and the scale of vaccination. There is also a risk of accelerated normalization of monetary policies in developed countries, which has a significant impact on the global financial market sentiment. 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. The upside scenario considers a more rapid recovery of the economy compared to the baseline scenario, while the adverse

scenario focuses on negative shocks. 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, global and domestic economies recover at rapid and more sustained pace compared to the baseline scenario. Higher vaccination rates and improved virus management than those assumed in the baseline scenario will have a positive impact on economic activity. In particular, the uncertainty surrounding the recovery of economic activity is reduced, which will encourage increased spending by consumers and firms, as well as improve investor sentiment. As economic growth in developed countries is accompanied the improvements in production capacity, inflationary pressures are negligible and monetary policy tightening is not expected. As a result, in contrast to the baseline scenario, the US Federal Reserve System will not change the policy rate in 2022; whereas, the European Central Bank's interest rate strategy is similar to the baseline scenario. As no further stimulus is needed to recover the economy, starting from 2023, the Fed and ECB will begin to gradually normalize their monetary policies.

As the financial conditions in developed countries remain accommodative, capital investment is growing and technological progress is accelerating. During the pandemic, the efficiency of the production process also improves along with the development and refinement of digital technologies. The improved epidemiological situation will accelerate the recovery of the labor force, especially in labor-intensive industries, which suffered the most during the pandemic. Following the improvements in long-term growth potential in developed countries, foreign direct investment is increasing in the developing and emerging market economies, thereby ensuring unrestricted access to financial resources, improving market sentiment, and accelerating

economic recovery in these countries.

In the upside scenario, upon the improvement of epidemiological situation and an increase in economic activity of Georgia's trading partners, international tourist flows will be restoring in 2022. Consequently, the nominal exchange rate of the GEL, both effective and against the US dollar, will appreciate. Meanwhile, a loose monetary policy in developed countries will improve market sentiment. As a result of these circumstances, the inflow of portfolio investments will increase, which will improve the current account. For the rest of 2021, the GEL exchange rate against the US dollar will remain at the current level, and in 2022 it will strengthen by 4%. The increased demand for GEL denominated assets leads to the reduction of macroeconomic risks, which is reflected in accelerated decline of the sovereign risk premium compared to the baseline scenario.

According to the upside scenario, amid the refinement of COVID-19 management methods and the improved global economic growth, the domestic economy is recovering at a faster pace than assumed in the baseline scenario. As a result, the financial conditions of companies improve and employment increases, which, in turn, has a positive impact on households. Since economic growth is fostered by the improvement of production capacity, the risk of inflationary pressures originating from stronger demand is negligible. At the same time, in the context of a sustained expansion of the global economy in 2022, the upside pressure on international commodity prices will quickly decline, which will reduce imported inflation. This effect is amplified by the appreciated exchange rate. Therefore, inflation is declining faster than in the baseline scenario, and monetary policy is likely to normalize sooner. Given the improved expectations and stronger demand, GEL denominated real estate prices will increase in proportion to the nominal economic growth.

Adverse Scenario

According to the adverse scenario, due to the lower rates of vaccination both globally and domestically compared to the baseline scenario, controlling the COVID-19 pandemic is less effective than expected. Supply delays caused by the pandemic turn out to be more persistent than initially expected, thus affecting the medium-term functioning of the world economy. Reduced supply potential and prolonged demand-supply mismatches for longer than anticipated will put increasing pressure on prices, leading to higher inflation expectations globally.

In the adverse scenario, as high inflation persists in developed countries, the uncertainty arises regarding the accommodative monetary policy by the world's leading central banks. This in turn results into increased inflation expectations, to which the central banks of advanced economies respond by faster-than-anticipated monetary policy normalization, which in turn leads to tightening of global financial conditions. In the face of uncertainty over the duration of the pandemic, the above-mentioned situation will be reflected in the reassessment of risks by investors and capital outflows in developing and emerging market economies. Consequently, reduced access to financial resources will lead to an increase in external debt and a deterioration of the current account. As a result, in contrast to the baseline scenario, the sovereign risk premium will increase in 2022 and gradually decrease in subsequent years.

According to the adverse scenario, the spread of new waves of pandemic in Georgia's trading partner countries leads to the introduction of additional restrictions, which hinders their economic activity. Uncertainty over the duration of restrictions on mobility and economic activity has a negative effect on market sentiment, which is why the positive momentum in inflows of international tourists and remittances observed in the first half of this year are lost. Risks stemming from the external sector are further exacerbated by

the worsened macroeconomic situation in Turkey. The deteriorated external balance and increased risks lead to depreciation of the local currency against the US dollar. In particular, the nominal exchange rate of GEL against the US dollar will depreciate by 10% in 2022. As the economy recovers, it will appreciate by 2% and 3% in 2023 and 2024, respectively. At the same time, the depreciation of the nominal effective exchange rate is relatively moderate, as global trends also negatively affect the trading partners' currencies.

The uncertainty about the pace of economic recovery has increased in the adverse scenario as a result of the slowdown in vaccination, along with a threat of new variants of the virus in the coming years. The economic recovery in the following year is hindered by sharply reduced external and domestic demand, as well as weak investment activity induced by deteriorated expectations. Meanwhile, the possibility of fiscal support for the economy in the face of increased external debt is declining. A delayed recovery of production capacity causes significant damage to production potential. Under the faltering recovery of the economy, low economic growth is expected in 2022, with signs of more robust recovery only observed from 2023.

According to the adverse scenario, the deflationary effect of weak demand is offset by a deterioration in production potential. However, the increased prices of imported goods resulting from the depreciation of the exchange rate and a significant increase in intermediate production costs will fuel inflation. Moreover, as a result of commodity prices remaining at elevated levels in international markets, inflation will reach a higher level compared to the baseline scenario. Due to a high level of inflation in the current year, along with expanded fiscal policy and uncertainty regarding the future development of events, inflation expectations are rising in the country. To tackle elevated inflation expectations the monetary policy will remain tight in the coming years. The policy rate will decrease as inflation pressures dissipate.

In the adverse scenario, given the deteriorated economic outlook and weak demand, the real estate activity is declining. However, amid high inflation and a depreciated national currency, the GEL denominated real estate prices are rising. A slow recovery of economic activity may also lead to closure of some businesses due to reduced demand and increased operating costs. Suspension of fiscal support in the face of increased public debt and tightened financial conditions pose risks to the solvency of companies. Unemployment

is rising significantly. Reduced incomes and increased uncertainty will also worsen the financial condition of households. As a result, households, along with companies, will face difficulties with servicing their debt. This, in turn, can lead to a significant increase in credit risk, which will have a negative effect on the financial system. If the impact on the balance sheets of financial institutions is substantial, the post-crisis recovery of the economy will be even slower and more uncertain.

Summary of Macroeconomic Forecast Scenarios

Scenario	Baseline	Upside (A Sustained Expansion)	Adverse (A Faltering Recovery)
FED Funds Rate	2021*: +0.0 pp (compared to the current level) 2022: +0.8 pp 2023: +0.7 pp 2024: +0.5 pp	2021*: +0.0 pp (compared to the current level) 2022: +0.0 pp 2023: +0.5 pp 2024: +1.0 pp	2021*: +0.0 pp (compared to the current level) 2022: +1.0 pp 2023: +0.9 pp 2024: +0.5 pp
ECB Policy Rate	2021*: +0.0 pp (compared to the current level) 2022: +0.0 pp 2023: +0.0 pp 2024: +0.5 pp	2021*: +0.0 pp (compared to the current level) 2022: +0.0 pp 2023: +0.25 pp 2024: +0.5 pp	2021*: +0.0 pp (compared to the current level) 2022: +0.25 pp 2023: +0.5 pp 2024: +0.25 pp
Change in Country Sovereign Risk Premium**	2021: -2.5 pp (compared to 2020) 2022: +0.0 pp 2023: -0.25 pp 2024: +0.0 pp	2021: -2.5 pp (compared to 2020) 2022: -0.2 pp 2023: -0.1 pp 2024: +0.0 pp	2021: -2.5 pp (compared to 2020) 2022: +2.0 pp 2023: -0.5 pp 2024: -0.5 pp
GEL/USD Nominal Exchange Rate	2021*†: Unchanged 2022: Unchanged 2023: Unchanged 2024: Unchanged	2021*†: Unchanged 2022: Appreciation 4% 2023: Appreciation 2% 2024: Appreciation 2%	2021*†: Unchanged 2022: Depreciation 10% 2023: Appreciation 2% 2024: Appreciation 3%
Nominal Effective Exchange Rate (NEER)	2021*†: Unchanged 2022: Unchanged 2023: Unchanged 2024: Unchanged	2021*†: Unchanged 2022: Appreciation 2.5% 2023: Appreciation 1.5% 2024: Appreciation 1.5%	2021*†: Unchanged 2022: Depreciation 6% 2023: Appreciation 1.5% 2024: Appreciation 2%
Real GDP Growth (YoY)	2021: 10.0% 2022: 5.0% 2023: 4.0% 2024: 4.5%	2021: 10.0% 2022: 5.0% 2023: 5.0% 2024: 4.5%	2021: 10.0% 2022: 2.0% 2023: 4.0% 2024: 5.0%
Change in Unemployment Rate	2021: +2.0 pp 2022: -1.5 pp 2023: -1.0 pp 2024: -0.5 pp	2021: +2.0 pp 2022: -2.0 pp 2023: -1.5 pp 2024: +0.0 pp	2021: +2.0 pp 2022: +0.5 pp 2023: -1.0 pp 2024: -1.0 pp
CPI Inflation (YoY)	2021: 9.5% 2022: 7.0% 2023: 2.5% 2024: 3.0%	2021: 9.5% 2022: 5.5% 2023: 3.0% 2024: 3.0%	2021: 9.5% 2022: 8.0% 2023: 4.0% 2024: 3.0%
Change in Real Estate Prices (expressed in GEL, YoY)	2021: 10.0% (compared to 2020) 2022: 7.0% 2023: 5.0% 2024: 5.0%	2021: 10.0% (compared to 2020) 2022: 6.0% 2023: 5.0% 2024: 5.5%	2021: 10.0% (compared to 2020) 2022: 9.0% 2023: 1.0% 2024: 3.0%
Monetary Policy Rate (%)††	2021*: Unchanged (compared to the current level) 2022: -2.0 pp 2023: -1.5 pp 2024: Unchanged	2021*: Unchanged (compared to the current level) 2022: -2.5pp 2023: -1.0 pp 2024: -0.5 pp	2021*: Unchanged (compared to the current level) 2022: +0.5 pp 2023: -2.0 pp 2024: -2.0 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 2021.

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

Appendix

Forecast Dynamics for Main Domestic Variables

Figure 1. CPI Inflation (YoY, %)

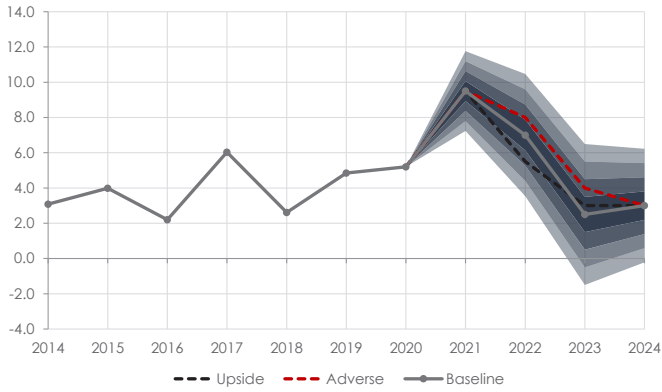


Figure 2. Real GDP Growth (YoY, %)

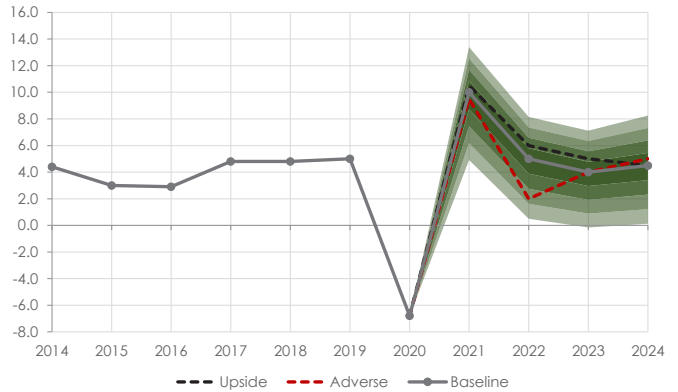
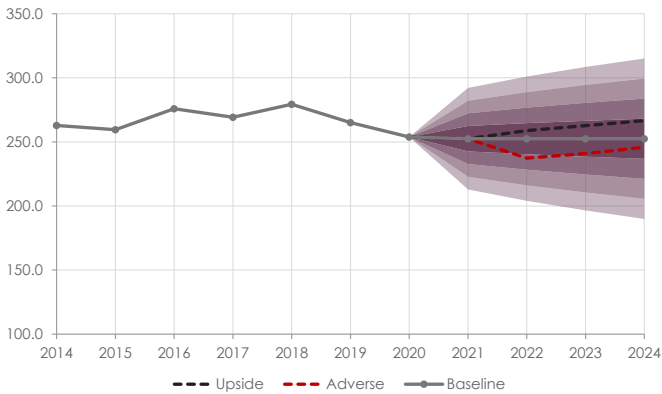
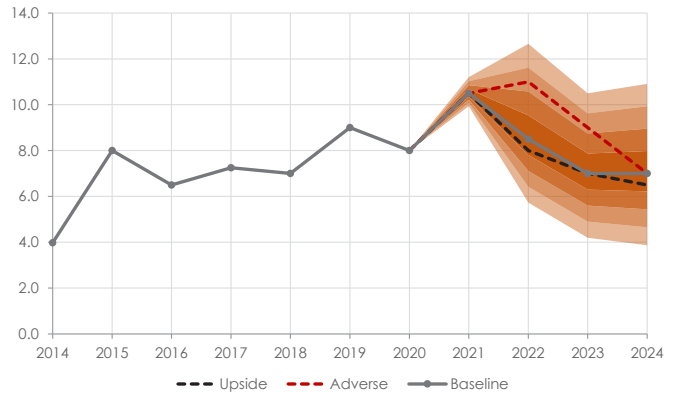


Figure 3. Nominal Effective Exchange Rate, NEER**



** 1995=100; Increase means appreciation

Figure 4. Monetary Policy Rate* (%)



	History							Forecast Scenario											
	2014	2015	2016	2017	2018	2019	2020	Baseline				Upside				Adverse			
								2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
CPI Inflation (YoY, %)	3.1	4.0	2.2	6.0	2.6	4.9	5.2	9.5	7.0	2.5	3.0	9.5	5.5	3.0	3.0	9.5	8.0	4.0	3.0
Monetary Policy Rate (%) *	4.0	8.0	6.5	7.25	7.0	9.0	8.0	10.5	8.5	7.0	7.0	10.5	8.0	7.0	6.5	10.5	11.0	9.0	7.0
Real GDP Growth (YoY, %)	4.4	3.0	2.9	4.8	4.8	5.0	-6.8	10.0	5.0	4.0	4.5	10.5	6.0	5.0	4.5	9.5	2.0	4.0	5.0
Nominal Effective Exchange Rate, NEER (1995=100)	262.9	259.5	275.9	269.3	279.4	265.0	253.8	252.5	252.5	252.5	252.5	252.5	258.8	262.7	266.6	252.5	237.4	240.9	245.7

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.

