



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 drives of the encompassing macroeconomic variables are the possible spread of the COVID-19 pandemic and the pace of vaccination. The baseline scenario considers gradual economic recovery starting from the current year. This is due to the increased scale of vaccinations, which makes it possible to gain the control over the spread of the virus. According to the upside scenario, the economic recovery is more widespread and sustainable compared to the baseline. This is achieved thanks to acceleration in vaccine rollouts both globally and within the country as well as buoyant investment activity. The adverse scenario assumes that the spread of the pandemic continues at high rates so that containment measures are reintroduced. This leads to a contraction in economic activity. The current forecast horizon is distinguished by more 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 August 2021 issue of the Monetary Policy Report and other relevant up-to-date information, economic activity will recover gradually in 2021. The spread of the COVID-19 pandemic is expected to be taken under control due to improved therapies and increased vaccine rollouts. As a result, uncertainty will subside and market sentiment will improve. Moreover, the rectification of the epidemiological situation and prompt recovery of the global economy will facilitate gradual improvements in international trade and tourism flows.

In the baseline scenario, global economic activity will grow at higher rates throughout 2021-2022 compared to the previous forecasts. This is due to accelerated consumption expenditure in advanced economies driven by the unprecedented scale of the fiscal

stimulus and a slowdown in the spread of the pandemic. The major central banks maintain accommodative monetary policy to support the economic recovery. The Federal Reserve System (Fed) and the European Central Bank (ECB) are expected to keep their policy interest rates at minimum levels and continue the massive asset purchase programs. However, in recent months, inflation pressures driven by accelerated economic activity have emerged in advanced economies. This may cause a faster-than-anticipated normalization of the monetary policy in these countries. In this case, global financial conditions will tighten, which will adversely affect developing and emerging market economies experiencing relatively slower pace of recovery. The latter group of countries are increasingly vulnerable to the possible tightening of global financial conditions due to increased external debt and current account deficit during the pandemic.

In this scenario, economic activity also improves in the trading partner countries starting from this year due to the more favorable epidemiological situation. This creates a solid foundation for the growth in investment and trade flows. International money transfers also increase. This year international tourism is expected to recover only partially as the spread of the pandemic varies across countries. As a result, the current account starts to improve. As the recovery in the tourism industry gains momentum next year, the external imbalance of the country will be reduced further. This, in turn, facilitates medium term stability of the nominal effective exchange rate (see Figure 3). GEL/USD exchange rate will also remain stable. Meanwhile, the economic growth and exchange rate stability will reduce the burden of external debt. Consequently, the vulnerability of the domestic economy to external shocks will decrease and the sovereign risk premium will remain at its current low level.

According to the baseline forecast, real GDP is expected to increase by 8.5% in 2021 (see Figure 2). The recovery of the economic activity will be driven predominantly by domestic demand, which is fueled by the

anticipated fiscal stimulus and credit growth throughout the year. The increase in domestic expenditure reflects improvements in consumer and business confidence as well as pent-up demand. Meanwhile, external demand will remain relatively weak this year, which is due to only partial recovery of international tourism inflows. Starting from 2022, as the pandemic-related uncertainty recedes, external demand and investment activity will improve substantially. However, domestic demand will remain the major driver of the economic growth. The stronger economic activity will be accompanied by higher employment. Thus, the unemployment rate will gradually decline from its elevated level registered at the beginning of this year. Initially, the decrease in unemployment will be rather slow due to the relatively weaker recovery in services industry, which is highly labor-intensive.

In the baseline scenario, inflation will remain above the target this year, which is predominantly due to a marked increase in commodity prices in international markets (see Figure 1). The hike in oil and food prices in international markets was accompanied by additional inflation pressures originating from increased utility costs within the country. Meanwhile, the disinflationary effect of the previously weak demand was eliminated as the economic activity improved. The high inflationary environment contributed to increased inflation expectations. Under the tightened monetary policy stance, the headline inflation is expected to start declining in 2022 as the one-off supply-side factors dissipate. It will converge to the target in the medium term.

According to the baseline scenario, real estate prices expressed in GEL will increase in 2021 compared to the previous year's average level. This increase is mostly driven by improvements in economic activity and market sentiment. The mortgage interest subsidies announced by the government will also contribute to real estate price growth. In addition, the costs of construction materials have also increased, which lead to higher cost of new buildings. Moreover, real estate rental prices have also increased from the beginning of this year,

which minimizes the risk of real estate price contraction. In the following years, real estate prices will rise proportionally to nominal economic growth.

As the inflation rate is expected to remain above the target this year in the baseline scenario, the risks related to increasing long-term inflation expectations have emerged. As a response, the monetary policy will remain tight for longer. The pace of the monetary policy easing will depend on how fast the inflation expectations will decline. The monetary policy rate is expected to decline gradually as the inflationary pressures dissipate. In the medium term, the policy rate will converge to its neutral level (see Figure 4).

The uncertainty surrounding the baseline scenario remains unusually high. The pace of the economic recovery will largely depend on the spread of the pandemic and the scale of vaccination rollouts. Uncertainty also persists regarding the pace of the monetary policy normalization in advanced economies with significant effects on global financial market sentiment. The following alternative scenarios build upon these sources of uncertainty and they consider alternative paths of development.

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, the global economic recovery is more widespread and sustainable compared to the baseline. During the current year, economic stimulus packages and widespread vaccinations in advanced economies create a solid basis for sustainable growth. Against the backdrop of eased financial conditions in these countries, investments in productive capital go up and technological advancements accelerate. The digital technologies implemented during the pandemic are improved further and they increase the efficiency of production processes. Labor force participation also goes up. As a result, long term potential growth in advanced economies improves considerably. These improvements are gradually spilled over to developing and emerging market economies through foreign direct investment. Along with the slowdown in the spread of the pandemic and emergence of the initial signs of sustained recovery, market sentiment also improves. This makes the economic expansion more sustainable.

In the upside scenario, the Fed and ECB policy rates follow their baseline trajectories. As the buoyant economic activity in advanced economies is accompanied by improvements in production capacity, inflation pressures are insignificant and there is no need for monetary policy tightening. Therefore, financial conditions remain accommodative in global capital markets. This, in turn, facilitates uninterrupted access to external funds among developing and emerging market economies.

In this scenario, the increasing economic activity in the trading partner countries leads to higher international trade in investment flows starting from this year, while International tourism gains momentum in 2022. Against the backdrop of improved market sentiment and eased monetary policy in advanced economies, the domestic economy experiences increasing portfolio investment inflows. Consequently, GEL effective exchange rate as well as the bilateral GEL/USD exchange rate tend to appreciate. Given the anticipated rebound in

foreign currency inflows, the GEL gains in value against the US dollar by 3% in rest of 2021, and then by another 3% in 2022. The increased demand for GEL denominated assets leads to temporarily lower sovereign risk premium compared to the baseline.

According to the upside scenario, optimistic expectations regarding the prospects of the economy lead to increased domestic demand. Subsequently, financial performance of companies improves and employment goes up. This, in turn, has a positive impact on households' financial state. Meanwhile, the stronger demand compared to the baseline does not create inflation pressures since the production capacity of the domestic economy improves as well. In addition, given the sustained expansion of the global economy, the upside pressure on commodity prices is reduced, which leads to lower imported inflation. The latter effect is reinforced by exchange rate appreciation driven by the improved current account. Accordingly, inflation goes back to the target sooner than assumed in the baseline scenario and the monetary policy returns to the neutral stance faster. Given the stronger demand and optimistic expectations considered in the upside scenario, real estate prices increase proportionally to nominal economic growth.

Adverse Scenario

In the adverse scenario, containment of the COVID-19 pandemic won't be feasible until the second half of 2022. This is due to the spread of new variants of the virus and disruptions in vaccination rollout, especially in developing and emerging market economies. As for advanced economies, the massive economic stimulus packages and accommodative monetary policy lead to strong demand. However, given the looming uncertainty regarding the duration of the pandemic, the production capacity of the economies shows no significant improvements. Subsequently, the strong demand morphs into inflation pressures. The central banks of the advanced economies respond to increased inflation expectations by faster-than-anticipated monetary policy tightening. This, in turn, leads to tightened global financial conditions and risk reprising.

This scenario assumes additional tightening of financial conditions among developing and emerging market economies, especially tourism-dependent countries, due to the elevated risks related to the duration of the pandemic. These are manifested in less favorable interest- and other non-interest-related lending terms, which lead to deteriorated access to funding. Moreover, the tighter financial conditions induce external debt servicing difficulties. Given the lingering uncertainty about the economic recovery, the elevated risks lead to a higher sovereign risk premium for the domestic economy.

According to the adverse scenario, the spread of new waves of the pandemic in trading partner countries leads to reintroduction of the virus containment measures. This causes the market expectations to deteriorate and economic activity to slow down. Consequently, the positive momentum in international trade registered in the first half of this year is lost. In addition, investment activity, international tourism and money transfers are all affected adversely by the reintroduced restrictions on mobility and economic activity as well as the uncertainty regarding the time frame of these restrictions. The deteriorated external balance

and increased risks cause the local currency to depreciate against the US dollar. The adverse scenario assumes GEL depreciation against US dollar by 10% compared to the current level in 2021 and by additional 5% in 2022. Along with the economic recovery, the GEL depreciation is reversed by 5% in 2023. During this period, the depreciation of nominal effective exchange rate is relatively moderate as the exchange rates of the trading partners are also affected negatively by the adverse developments.

Given the virus containment measures and the uncertainty related to their time frame in the adverse scenario, market sentiment deteriorates and the economic recovery is delayed. This is caused by much weaker external demand together with sluggish consumption and investment activities in the face of looming uncertainty and adversely revised expectations. In addition, given the increased government debt, the fiscal space for the support of the economy will be limited. The prolonged weakness of the economy will lead to deteriorated production capacity and therefore a significant impairment of the potential growth. Under the faltering recovery, there will be a cumulative drop in real GDP growth by 5.5 ppts relative to the baseline scenario throughout 2021-2023. The robust signs of the economic recovery show up in the second half of 2022.

In the adverse scenario, the increase in import prices and intermediate production costs caused by the exchange rate depreciation will overwhelm the disinflationary effects of the weaker demand. In addition, disruptions in global supply chains cause the commodity prices in international markets to remain at elevated levels. These factors lead to a higher CPI inflation compared to the baseline scenario. Moreover, inflation expectations also increase in the face of higher actual inflation and lingering uncertainty. Against the backdrop of increasing inflation expectations, monetary policy is further tightened this year. In the medium term, as inflation pressures dissipate, the monetary policy rate decreases gradually to its neutral level. In the adverse scenario, given the deteriorated economic outlook and weak

demand, activity in the real estate market slows down. In the following periods, as the economy regains momentum, real estate market starts to expand gradually.

The faltering recovery considered in the adverse scenario can induce a material increase in credit risk. Uncertainty, reduced incomes and higher operating costs will weigh on the financial resilience of households and companies. Due to the tightened financial

conditions and limited fiscal space in the face of increased government debt, companies are likely to run into increased solvency risks. In this scenario, unemployment will surge and households along with firms will face debt-servicing problems. This way the sizable contraction of the economy could have negative spillovers on the financial system. If the balance sheets of the financial institutions are affected in a material way, the post-crisis recovery will be much slower and 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: +0.0 pp 2023: +0.5 pp	2021: +0.0 pp (compared to the current level) 2022: +0.0 pp 2023: +0.5 pp	2021: +0.0 pp (compared to the current level) 2022: +0.5 pp 2023: +1.0 pp
ECB Policy Rate	2021: +0.0 pp (compared to the current level) 2022: +0.0 pp 2023: +0.25 pp	2021: +0.0 pp (compared to the current level) 2022: +0.0 pp 2023: +0.25 pp	2021: +0.0 pp (compared to the current level) 2022: +0.25 pp 2023: +0.5 pp
Change in Country Sovereign Risk Premium*	2021: -2.5 pp (compared to 2020) 2022: -0.0 pp 2023: -0.0 pp	2021: -2.5 pp (compared to 2020) 2022: -0.5 pp 2023: -0.0 pp	2021: -1.0 pp (compared to 2020) 2022: +1.0 pp 2023: -2.0 pp
GEL/USD Nominal Exchange Rate	2021: Unchanged (compared to the current level) 2022: Unchanged 2023: Unchanged	2021: Appreciation 3% (compared to the current level) 2022: Appreciation 3% 2023: Unchanged	2021: Depreciation 10% (compared to the current level) 2022: Depreciation 5% 2023: Appreciation 5%
Nominal Effective Exchange Rate (NEER)	2021: Unchanged (compared to the current level) 2022: Unchanged 2023: Unchanged	2021: Appreciation 2% (compared to the current level) 2022: Appreciation 2% 2023: Unchanged	2021: Depreciation 6% (compared to the current level) 2022: Depreciation 3% 2023: Appreciation 3%
Real GDP Growth (YoY)	2021: 8.5% 2022: 4.0% 2023: 5.0%	2021: 10.0% 2022: 5.0% 2023: 5.5%	2021: 6.0% 2022: 2.0% 2023: 4.0%
Change in Unemployment Rate	2021: +1.0 pp 2022: -1.0 pp 2023: -2.0 pp	2021: -0.0 pp 2022: -1.5 pp 2023: -2.0 pp	2021: +3.0 pp 2022: +1.0 pp 2023: -2.0 pp
CPI Inflation (YoY)	2021: 9.0% 2022: 5.5% 2023: 3.0%	2021: 8.5% 2022: 4.5% 2023: 3.0%	2021: 10.0% 2022: 7.5% 2023: 3.0%
Change in Real Estate Prices (expressed in GEL, YoY)	2021: 5.0% (compared to 2020) 2022: 5.0% 2023: 5.0%	2021: 8.0% (compared to 2020) 2022: 7.0% 2023: 6.0%	2021: 3.0% (compared to 2020) 2022: 2.0% 2023: 5.0%
Monetary Policy Rate (%)	2021: +0.5 pp (compared to the current level) 2022: -1.0 pp 2023: -1.5 pp	2021: Unchanged (compared to the current level) 2022: -1.0 pp 2023: -2.0 pp	2021: +1.0 pp (compared to the current level) 2022: +1.0 pp 2023: -3.0 pp

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

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

Appendix

Forecast Dynamics for Main Domestic Variables

Figure 1. CPI Inflation (YoY, %)

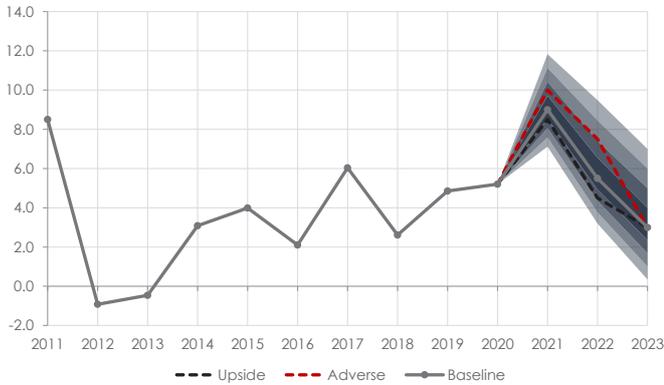


Figure 2. Real GDP Growth (YoY, %)

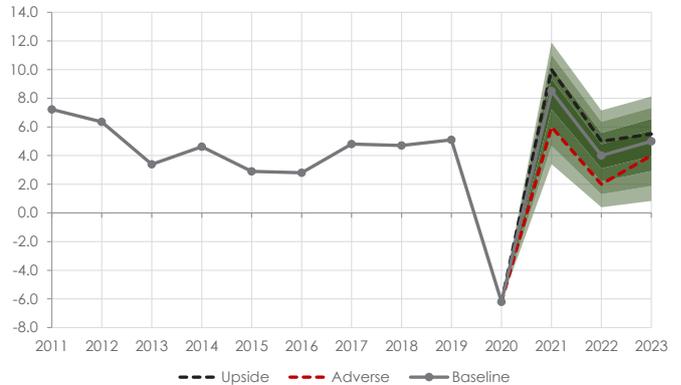


Figure 3. Nominal Effective Exchange Rate, NEER*

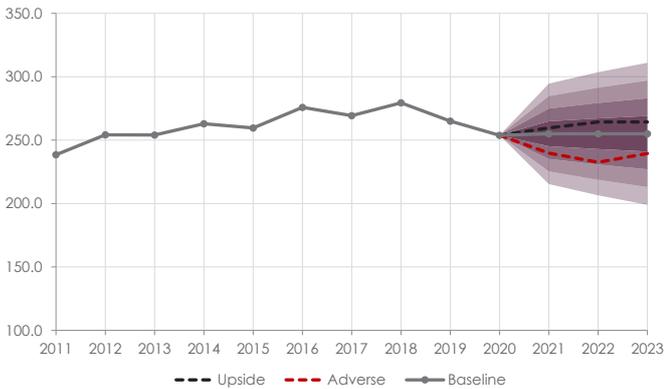
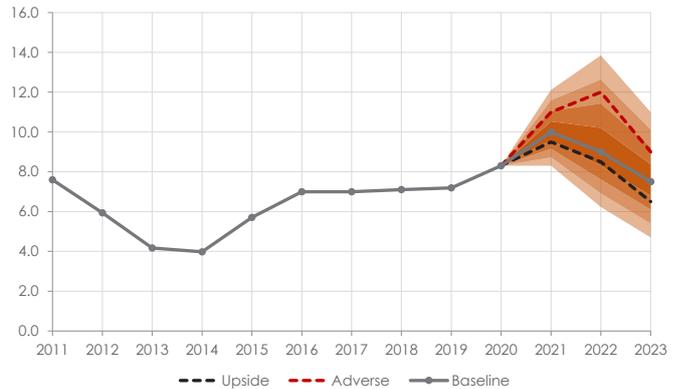


Figure 4. Monetary Policy Rate (%)



* 1995=100; Increase means appreciation

	History										Forecast Scenario								
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Baseline			Upside			Adverse		
											2021	2022	2023	2021	2022	2023	2021	2022	2023
CPI Inflation (YoY, %)	8.5	-0.9	-0.5	3.1	4.0	2.1	6.0	2.6	4.9	5.2	9.0	5.5	3.0	8.5	4.5	3.0	10.0	7.5	3.0
Monetary Policy Rate (%)	7.6	5.9	4.2	4.0	5.7	7.0	7.0	7.1	7.2	8.3	10.0	9.0	7.5	9.5	8.5	6.5	11.0	12.0	9.0
Real GDP Growth (YoY, %)	7.2	6.4	3.4	4.6	2.9	2.8	4.8	4.7	5.1	-6.2	8.5	4.0	5.0	10.0	5.0	5.5	6.0	2.0	4.0
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	255.0	255.0	255.0	259.6	264.3	264.3	239.7	232.5	239.5

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.).

