Monetary Policy

Operations Manual

საქართველოს ეროვნული ბანკი
National Bank of Georgia

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I. Contents

I. The role of the National Bank of Georgia (NBG) and its main objective

1. The National Bank of Georgia (NBG), as the central bank of the country, is to ensure price stability, which contributes to long-term economic growth. The latter depends on a combination of other factors, including the growth of productivity and capital. Economic growth is characterized by four changing cycles – expansion, peak, contraction and trough. During periods of high volatility in economic cycles, the volatility of employment increases, reducing the productivity of labor and leading to lower economic output. The monetary policy of central banks aim at ensuring price stability, which reduces the volatility of the economic cycle, thereby contributing to long-term economic growth. It is important to note that price stability is a prerequisite for the efficient allocation of resources in the economy. Through supporting price stability, the National Bank of Georgia contributes to financial stability that supports long-term sustainable growth. Moreover, ensuring price and financial stability reduces unemployment and increases welfare.

2. The main objective of the National Bank of Georgia is to ensure price stability. However, price stability does not imply constant prices, since under a market economy prices change regularly. A moderate increase of the general price level, that is a moderate level of inflation, is natural under economic growth and consecutive increase in household incomes. Price stability thus implies a level of inflation over the medium term that takes the right balance between long-term income growth and increase in prices. In other words, price stability is the optimal level of inflation when the long-term growth of real income is the highest and remains sustainable.

II. The main principles of monetary policy

II.i The independence of the National Bank of Georgia

3. The independence of the National Bank of Georgia is an essential precondition for successful and efficient monetary policy. Expectations are one of the most important determinants of inflation. If expectations are anchored, price stability is achieved at the lowest social costs. In other words, if expected inflation is close to the inflation target, a moderate change in monetary policy is sufficient to achieve price stability. However, if inflation expectations are high, the central bank has to increase interest rates significantly in order to maintain price stability, which in turn affects the economic growth and employment. The same happens in the opposite direction: if reduction in prices is expected in the future, companies will abstain from making investments, which also reduces economic growth and employment. To keep inflation expectations at the target level, it is essential that the main objective of the NBG, which is price stability, is kept independent from the other goals of the government, such as economic growth and a reduction of unemployment in the short run. Otherwise, there may be an expectation that the NBG will attempt to achieve a short-term leap in economic growth at the expense of high unanticipated inflation. However, as economic growth stimulated by inflation is temporary and is followed by both a decline in the economic growth and even higher inflation, such expectations would lead to a reduction of growth in both the short and long term. The independence of the NBG is a necessary precondition for long-term, stable economic

growth. The independence of the NBG is defined in the Organic Law of Georgia on the National Bank of Georgia, which states: "The National Bank of Georgia is independent in its activities and the representatives of legislative and executive power are not entitled to interfere in its activities".

4. Along with the independence of the NBG, its accountability and transparency are important. The National Bank of Georgia publishes and presents annual report to the Parliament of Georgia every year. This document summarizes the policies implemented by the NBG in regard to monetary policy, supervisory activities, and all other main functions. In addition, the NBG publishes quarterly Monetary Policy Reports, which are the main communication documents for monetary policy. These contain the forecasts of the NBG and outline the reasons behind any decisions made. Information on monetary policy decisions is also immediately published on the website of the NBG as a press release. Moreover, in order to inform general public, the NBG periodically publishes various analytical reports, monthly overviews, current macroeconomic indicators, financial sector indicators, etc.

II.ii. The inflation targeting regime

II.ii.a Why inflation targeting?

5. The monetary policy of the NBG relies on an inflation targeting regime. This framework was first implemented in the beginning of the 1990s and since then has become a very effective tool for achieving price stability. The National Bank of Georgia moved to inflation targeting regime since 2009, when it replaced the monetary targeting approach.

6. Following the development of the financial sector, the stable relationship between money supply and inflation disappeared. Consequently, the use of the money supply as an operating tool became ineffective. Under the monetary targeting approach, monetary policy aims at controlling the growth rate of monetary aggregates to ensure the desired level of inflation. The monetary targeting regime was based on the notion of a predictable relationship between money supply and inflation, where the change in money supply is reflected in the change in price level. However, over time, in Georgia similar to other countries the relationship between money supply and inflation became inconstant. Consequently, using the money supply as an operational target became inefficient.

7. Inflation targeting is an efficient monetary policy framework. Under the inflation targeting regime, the inflation forecast is used as a medium-term target. Not only does this approach simplify communication with general public, but it also allows for a more effective use of the instruments of the NBG. In the case of inflation targeting, the impact of changes in short-term interest rate on the real economy and inflation is clearer and more homogeneous than in the case of alternative regimes. It should further be noted that inflation targeting requires higher degree of policy transparency and communication.

II.ii.b. The basic principles behind inflation targeting

8. The three main elements of the inflation targeting regime are:

(i) The quantitative inflation target
(ii) The Forecasting and Policy Analysis System
(iii) Communication

9. The quantitative inflation target. Under the inflation targeting regime, the NBG announces a medium term annual quantitative inflation target. The inflation target represents the so-called "nominal anchor" for the economy.

10. The Forecasting and Policy Analysis System. Monetary policy decisions are fully transmitted to the economy with a certain time lag (of 4-6 quarters). Monetary policy decisions are based on NBG's future view on core macroeconomic variables – macroeconomic forecasts that shows how the actual inflation is going to converge to the target rate in the medium term. The macroeconomic forecasts of the National Bank of Georgia are updated every quarter and are published in the Monetary Policy Report.

11. Communication. Inflation expectations are one of the key determinants of inflation. Hence, the NBG aims at maintaining inflation expectations at near the target level. For this it is essential to maintain regular and effective communication on objectives and implementation of monetary policy and to ensure transparency. Compared to other monetary policy regimes, one of the advantages of inflation targeting is the simplicity of its communication, since announced inflation target gives clear signal about central bank objective and guides expectations regarding future changes in monetary policy.

II.iii Monetary policy in Georgia

II.iii.a. The main objective of monetary policy

12. The main objective of the monetary policy of the National Bank of Georgia is to maintain price stability. Price stability implies a moderate and predictable rate of inflation in the medium term. Taking into account Georgia's current economic structure, an annual inflation rate of 3% is considered optimal for ensuring price stability in the medium term.

13. Monetary policy is a tool to control aggregate demand. In the medium term, monetary policy meets the desired level of inflation by affecting aggregate demand. However, in addition to demand-side factors, inflation can be caused by the factors independent (exogenous) from monetary policy, and as a result inflation can deviate from the target level. Inflation targeting regime tolerates such temporary deviations from the target level. The National Bank of Georgia, alike other central banks, thus does not react to deviations caused by these exogenous factors, except cases where the deviation is so strong that it would affect fundamental factors.

14. Inflation can **temporarily deviate from the target level**, but at the same time the goal of monetary policy is to avoid even small permanent deviations from the target level.

Box 1. Inflationary and deflationary spirals

Inflation is the process of an increase in the general price level. More specifically, it is the average increase in the price level of all goods and services consumed in a given country. High inflation is reflected on a reduction in the purchasing power of the national currency. Moreover, high inflation is associated with a number of costs that hamper economic growth, employment and overall welfare.

Inflation expectations are one of the main causes of inflation. Without a proper response from the central bank, increasing inflation expectations might lead to an inflationary spiral. This implies a chain reaction between rising prices and rising wages (income) when the purchasing power per unit of money rapidly declines. Specifically, a significant rise of inflation expectations increases pressure for higher wages. Higher wages of economic agents, all else being equal, implies rising demand for goods and services, which itself causes a further increase in inflation and its expectations. One way to avoid an inflationary spiral is an appropriate monetary policy reaction in tandem with active communication to better manage expectations. Consequently, central banks should react to inflation expectations by tightening monetary policy when expectations increase and loosening it when expectations subside.

Deflation, on the other hand, is a decrease in the general price level. This is the process in which the purchasing power per unit of money increases and buys more goods and services. Deflation is as undesirable for the economy as high inflation. During deflation, the real value of debt increases, which is harmful for economic stability. A deflationary spiral is especially damaging, where chain reactions could bring the economy into a long-run recession. In such a spiral, economic agents, with the expectation of reduced prices, delay private consumption, which decreases aggregate demand and prices. Low prices encourage wages to decrease, which further decreases aggregate demand. Another negative side of this process is that it is more difficult for a central bank to prevent a deflationary spiral than an inflationary one, due to the effective lower bound on interest rates. The necessity of avoiding deflationary spirals is thus one of the arguments for central banks adopting low, albeit still positive inflation targets.

II.III.b. Benefits of low inflation

15. **Low inflation is an important precondition for high, long-term economic growth and public welfare.** High and volatile inflation or deflation is associated with economic costs. In such circumstances, the efficiency of the financial markets and the market for goods and services is hindered, which prevents an effective allocation of resources in the economy. We discuss the benefits of low inflation in more detail below.

16. Efficient allocation of resources. Prices in the market economy have a signaling function. An increase in prices indicates an increase in demand for goods and services to producers. In a high

inflation environment, it is difficult for a producer to determine whether higher prices are a result of inflation or increased demand, thereby hindering the effective allocations of resources; whereas in a low inflation environment, factors of production are channeled to more productive sectors.

17. Improvement of investment climate. A low inflation environment eases the planning of long-term business projects and the results (revenues and expenditures), which in turn increases investments.

18. "Menu costs". In a high and volatile inflation environment, economic agents (e.g. firms) are forced to change the prices of goods or services frequently that creates additional financial cost and may be significant. Meanwhile, in a low inflation environment, such costs are insignificant.

19. Low long-term interest rates. On money and capital markets, investment decisions are made based on real interest rates, the return after inflation. Nominal interest rates on the market include the real interest rate component and the inflation risk premium (compensation). The higher the inflation and/or its volatility, the higher the risk premium, which will ultimately result in higher nominal interest rates on financial markets. Thus, low and stable inflation reduces inflation risk, which is reflected in the stability of interest rates and encourages domestic and foreign financial investments.

20. An increase in savings. High inflation reduces real national savings as the purchasing power of the national currency decreases.

21. High inflation leads to accidental distribution of real income and wealth among economic agents (suppliers and consumers, borrowers and lenders). For example, in a high inflation environment, real interest rates on financial liabilities will fall, which puts borrowers in a better position, minimizing their debt burden. As a rule, a high inflation environment hurts the lower income group of society who are unable to hedge themselves against inflation risks.

22. Risks to financial stability. High inflation may have a significant impact on the assets of economic agents (firms and households), eroding their purchasing power. This can reduce the quality of assets and threaten financial stability. Consequently, maintaining a low level of inflation is key for financial stability.

23. High inflation can cause social and political problems as it imposes significant damage to low-income populations that have limited access to different financial instruments.

24. On the other hand, deflation also leads to negative results. With a decrease in prices and an increase in the value of money, the households reduce spending and businesses cut investments, which further reduces economic growth and, consequently, deepens deflation.

25. Long-term deflation hampers financial intermediation. During a period of long-term deflation, the real value loans can be very high. Consequently, debt servicing becomes difficult, increasing credit risk and, therefore, reducing lending.

26. **We can thus conclude that price stability is an important factor for the efficiency of the economy**. This will eventually be reflected in long-term economic growth, higher employment and greater social welfare in general.

II.iii.c. The long-term inflation target is 3%

27. The inflation target of the NBG is 3%. The National Bank of Georgia introduced its inflation targeting framework in 2009. At the initial stage, the inflation target was set at 6%. Later Inflation target was reduced to 5% in 2015 and to 4% in 2017. From 2018, the inflation target was set at 3% and, at this stage, no further changes are planned. It is important to note that the average annual inflation rate has stood at 3.9% since 2009.

28. Inflation is measured using the Consumer Price Index (CPI). Although CPI is the best measure of inflation, it has several biases. Because an increase in prices may follow an improvement in the quality of goods (quality bias) it is not always possible to exclude this effect from the CPI. This type of bias is relatively common in transition economies, where the quality of goods and services are improving at a rapid pace. It should also be noted that economic agents are quick to respond to changes in prices. As a result of increased prices on certain goods, consumers may substitute consumption with different close substitute goods (substitution bias). Moreover, new products are constantly added to the market, changing the structure of the consumer basket. Despite the fact that the consumer basket is periodically updated, changes in consumer shopping patterns are reflected on the CPI with a certain time lag. Considering these biases and the fact that consumers are prone to seek cheap alternatives, in reality the true level of inflation is often less than the figure shown by the CPI.

29. In general, the main objective of central banks is to maintain low and stable inflation, but this does not mean an inflation level of 0%. Since the changes in prices for the various components of the consumer basket are not the same, a rate of inflation of 0% would imply that the prices of certain goods and services will actually decline. Thus, with a target under 0%, we would actually get deflation that would negatively impact economic growth.

30. Sticky wages. Another reason why policymakers want to have positive but low inflation environment is downward wage rigidities. In response to economic shocks, employers are able to increase wages more easily than they can be cut. In a 0% inflation environment, in response to reduced demand, firms face difficulties cutting real wages. As a result, job cuts are employed to optimize costs, resulting in rising unemployment.

31. Considering the arguments discussed above, economists widely agree that the inflation target should be positive. However, it remains important to keep inflation at a low level, as high inflation is associated with high social costs. In general, uncertainty about inflation increases economic costs. High inflation is more volatile, which increases uncertainty about its future path and that ultimately affects the country's economic activity.

32. Given each of these points, it is optimal for a country to maintain low, but positive inflation. The target rate of inflation in developed countries varies within 1-3%, while in developing economies the target level is within 2-4%.

33. Assessing the desired level of inflation depends on a variety of factors, including economic growth and productivity. In general, productivity in developing countries grows at a higher rate than in developed economies, and this is especially notable in tradable goods. Increased productivity in the tradable goods sector is accompanied by a rise in wages. The mobility of labor leads to a growth of wages in other sectors as well. As a result, following a rise in wages, the average price level in the entire economy increases (the Balasa-Samuelson effect). Therefore, the higher the growth rate of a country's productivity relative to other countries, especially in the trading sector, the higher the rate of inflation. According to the estimates of the National Bank, at the current stage of development, the desired rate of inflation for Georgia is 3% – which is thus the long-term inflation rate target.

Box 2. Inflation and monetary policy

Inflation is the growth rate of the overall level of prices in a country. It is an important economic indicator, as high inflation or deflation can damage the potential long-term economic growth of an economy. Therefore, the goal of economic policy is to sustain such a level of inflation where long-term economic growth is at its maximum level (which corresponds with its potential level). The overall price level depends on the state of aggregate demand and aggregate supply. As monetary policy is a tool used to control aggregate demand, the NBG only reacts to inflation stemming from demand-side shocks. In the event of supply-side shocks that cause the prices of individual products to rise, using monetary policy to restore the price level is mostly counterproductive. For example, when oil prices increase globally, leading to rising fuel prices in Georgia and causing an increase in the CPI, a tightening of monetary policy cannot affect international oil prices and would only restrict the local economy, causing a slowdown of the economic growth and increasing unemployment. The same logic applies to increasing prices of food. Hence, central banks do not react to these kinds of supply-side shocks except in such cases where a rising CPI would cause an increase in inflation expectations, which would require a tightening of monetary policy.

The increase in prices of cigarettes due to rising excise tax is another factor that would push inflation upward. However, as in similar cases, restricting the economy by tightening monetary policy in order to balance rising cigarette prices, and as a result decreasing the prices of other goods and services, is not the role of monetary policy. Although a rise in excise tax increases the costs for smokers, it also increases tax revenues. The distribution of costs and revenues is a matter of budgetary policy, and not monetary policy. A similar misconception is that exchange rate depreciation is the same thing as inflation. Of course, changes in the exchange rate is an important factor affecting inflation, but it is neither the only nor the most important factor determining inflation. Monetary policy decisions are made taking into account all factors affecting inflation.

II.iv Exchange rate policy

II.iv.a. Exchange rate flexibility

34. As a result of financial globalization, the necessity for countries with small open economies to maintain a flexible exchange rate has increased even further. The liberalization of financial markets, the increase of capital mobility and the liberalization of the current account all gave a strong impetus for the development and expansion of more flexible exchange rate regimes. The tighter connection between national economies in the global financial world, as well as the growing trend of capital flows, has increased the necessity for a flexible exchange rate.

35. The advantages of a flexible regime are that it supports the correction of external imbalances and the probability of speculative attacks is reduced. Moreover, a fixed exchange rate regime, unlike a floating regime, restricts the possibility of the central bank acting as the lender of last resort and requires high official international reserves, which are costly.

36. Optimal currency area. For a fixed exchange rate or a foreign currency as legal tender to be beneficial for a country, it must form an optimal currency area with the country whose national currency is used for fixing. An optimal currency area requires the existence of several preconditions: countries sharing a common currency must not have exposure to asymmetric macroeconomic shocks, or there should be intense trade and economic relations, as well as a high mobility of labor and capital among those countries.

II.iv.b. Advantages of the flexible exchange rate for Georgia

37. The flexible exchange rate for Georgia works as external shocks absorber and supports long-term economic growth and employment. The global economy is characterized by fluctuations as shocks are happening constantly. Events occurring in trading partner countries – like the depreciation of the Turkish lira, the military conflict in Ukraine, economic sanctions against Russia, and the appreciation of USD in global markets – all impact the Georgian economy. In the event of negative shocks, when external demand falls, the depreciation of the exchange rate stimulates demand on Georgian exports, including on tourism, and decreases demand on imports. Hence, the negative impact of an external shock on the Georgian economy is substantially lower under a flexible exchange rate regime.

38. The flexible exchange rate gives Georgia the opportunity to have an independent monetary policy. Given free capital mobility, conducting independent monetary policy is impossible without a flexible exchange rate regime. Independent monetary policy slows down the economic volatility caused by business cycles. As a result, inflation and employment become stable, which is a prerequisite for long-term economic growth and higher welfare.

39. With a flexible exchange rate the probability of a currency crisis decreases. Under a flexible exchange rate regime, any new information or shock is instantly reflected in the exchange rate and thus risks do not accumulate over time. At the same time, exchange rate volatility gives an impulse to market participants to insure against exchange rate risk. By doing so, they are resistant

to exchange rate fluctuations, and this also helps the development of a market for hedging instruments.

40. Georgia does not share an optimal currency area with countries that have strong currency. Georgia does not have any exceptionally large trade partners and its external trade is highly diversified with respect to its partner countries. Furthermore, the dynamics of Georgian business cycles and macroeconomic shocks are quite different from those of the US and the eurozone countries. Georgia does not have free labor mobility with the US or the eurozone, and Georgian citizens attempting to enter those markets face many obstacles. In such a situation, fixing the lari to the USD dollar or euro would restrict the ability of the National Bank of Georgia to conduct countercyclical monetary policy independent from the Federal Reserve System or European Central Bank. It would also restrict the NBG from stimulating the economy during a recession or from tightening monetary policy during an economic boom.

II.iv.c. Exchange rate policy in Georgia

41. A floating exchange rate policy implies minimal intervention on the market. The National Bank will only intervene on the foreign exchange (FX) market for the following reasons: (a) for the purpose of accumulating international reserves; (b) for smoothing excessive short-term volatility caused by temporary capital flows; (c) for balancing government's external operations; and (d) for supporting price stability.

42. Accumulating international reserves. To ensure external sustainability, it is important for a country to hold a sufficient amount of international reserves. Holding a reserve buffer reduces the country risk and thus lowers the probability of capital flight and crises. For small open economies, that have high levels of dollarization, like Georgia, international reserves serve as buffers for foreign exchange liquidity. This implies the balancing of one-time, short-term liquidity needs. For the NBG to hold an adequate level of reserves, it makes occasional interventions and buys foreign currency on the market.

43. Smoothing excess volatility. Given the volume of the FX market in Georgia, large one-time transactions would likely increase the short-term volatility of the exchange rate. If the scale of such volatility is so large that confidence towards the financial system is shaken and/or it increases inflation expectations, then the National Bank will intervene on the FX market.

44. Balancing the private and public external balance. The need for intervention may arise as a result of government operations conducted in FX currency. Since government accounts are held at the NBG, inflows and outflows in the state budget go through the account at the NBG and do not enter the FX market. Therefore, even when the overall balance of payments may be balanced it could show negative external balance in the private sector and a positive balance in the public sector. In such a case, to close that gap the NBG will intervene on the FX market. For example, after the crisis of 2008-2009, the private sector had a negative external balance, while the public balance had a positive external position due to foreign governmental aid. To lessen this imbalance, at that time the NBG provided FX to the private sector.

45. Supporting price stability. When the loosening of monetary policy cannot be done quickly by use of the policy rate alone, the NBG can supplement monetary policy easing by FX interventions.

46. It is worth noting that interventions cannot aim to contain exchange rate depreciation that is caused by fundamental factors. During such times, central bank interventions end up being counterproductive, as has been shown by the experiences of many countries.

47. In a floating exchange rate regime, the exchange rate is determined by market forces, where currency is demanded and supplied by those firms and individuals who need lari or foreign currencies for different purposes, including for local or import/export operations. The factors affecting the exchange rate in the short term differ from those that affect the exchange rate over the medium or long term. If, in the long run, the impact of structural factors on the exchange rate dominate, in the medium term it is the impact of cyclical factors that are key; while in the short term, it is the expectations of market participants that affect exchange rate developments. The volatility of the exchange rate in the short run is often chaotic and much higher than it is for corresponding macroeconomic variables. The short-term, chaotic volatility of the exchange rate is prone to be affected by constantly updated information and thus by the reaction of market participants to that information.[1] In the long run, the dynamics of the exchange rate is affected by the combination of factors, including levels of comparative prices, different consumer preferences on local and imported goods, trade barriers and productivity. Therefore, events affecting such factors are also reflected in changes of the exchange rate, which might be either temporary or permanent. In the medium run, the dynamics of exchange rate are mainly affected by local and foreign business cycles, and monetary and fiscal policies. Cyclical forces often urge exchange rate deviations, which might be kept for longer periods of time. However, in the long run, medium-term cyclical factors will disappear and their impact is thus minimal. Meanwhile, the dynamics of the exchange rate in the short term depends on both the demand and supply sides of the FX market, which are characterized by high volatility as expectations play a very important role. However, at the same time, the flexibility of the exchange rate plays the role of a shock absorber and thus supports the long-term stability of the domestic currency.

48. From 2009, the interbank FX market moved to a bilateral trade system and transactions are mainly performed via the Bloomberg trading platform. This platform has many advantages, which include (a) the possibility of making transactions 24/7; (b) participation is not restricted; and (c) there are no additional commission fees other than the annual fee for using the platform. The new platform is equipped with up-to-date and reliable technologies and making transactions in a foreign currency is easy and riskless. Seeking permission from the NBG for participation in this platform is not necessary. The new Bloomberg system, through which more than 95% of interbank FX trade agreements are performed, allows the NBG to monitor the FX market in real time and, based on the transactions carried out, to calculate the average daily exchange rate, which is the weighted average rate of all transactions made during the last 24 hours. The "official rate" is the previous day's average and, as usual, this is used for accounting, customs and other official purposes.

[1] Barbakadze, G., Bakradze, G., Zedginidze, Z. & Tvalodze, S. (2014) "Determinants of the Exchange Rate", *Economics and Banking*, Vol. 2 https://www.nbg.gov.ge/uploads/journal/2014/statia1.pdf

II.iv.d. Instruments for FX interventions

49. The NBG uses foreign exchange auctions for foreign exchange sales and purchase, as well as auctions for sales of FX options.

50. FX auctions are the monetary policy instrument using which the NBG sells or buys FX on the interbank market. These auctions are performed on the Bloomberg trade platform. All commercial banks are allowed to participate in auctions. Notifications about upcoming auctions are sent to commercial banks in advance, at least an hour before the auction. FX auctions are based on the multi-price method.[2] Each commercial bank can present only one offer at the auction. Settlement with the bank(s) winning the auction occurs the next business day. After the auction, the results are sent to all commercial banks and are published on the official website of the National Bank of Georgia.

51. FX options are an exchange rate policy instrument used by the NBG since 2019 to fill its international reserves. The options give the right to the owner (commercial bank) to acquire GEL (in exchange for USD or EUR) from the NBG at the official exchange rate. Commercial banks will use the opportunity to acquire GEL when the lari exchange rate has a tendency to appreciate – that is, when the GEL is stronger than the official exchange rate states. The FX option has an additional condition that it can be exercised only on those days when the lari official exchange rate is stronger than the previous 20-day average. This restriction prevents use of this instrument in cases where the exchange rate exhibits short-term fluctuations. The NBG sells FX options via the Bloomberg trade platform through auctions, where all commercial banks can participate. The tentative monthly schedule for one year of future FX options auctions are published on the NBG's website. In a particular month, the NBG can increase or decrease the amount of FX options offered. The auctions are based on the multi-price method and each bank is only eligible to make one offer. The winning bank(s) pay the option premium the next working day and is eligible to use the option during the following month. If a commercial bank did not exercise the option during that particular month, then that option expires and the bank does not get the premium back.

52. Rule based interventions. In 2020 the NBG introduced a rule based intervention mechanism. The purpose of the interventions is to reduce the excess volatility in the foreign exchange market, which is important for the main goal - price stability. The BMatch system is appropriate for this type of interventions. The rule-based mechanism implies that when the exchange rate fluctuation exceeds a predetermined mark, the NBG intervenes. In case of low liquidity in the foreign exchange market, the NBG can reduce the excess fluctuations more effectively by the small amount interventions.

[2] This is an auction method whereby each offer of the winning participant is satisfied at the price stated in the offer.

53. The NBG only makes sterilized interventions. In the event of FX purchases, the GEL liquidity supply increases; while in the case of sales, liquidity is reduced. This can cause an undesirable volatility of interest rates, which will induce a rise in interest risk. As a result, interest rates on long-term loans will be higher and long-term growth prospects will be lower. To avoid affecting interest rates through FX interventions, central banks make sterilized interventions. The sterilisation of FX interventions are done through open market operations. In the case of FX purchases, demand on refinancing loans is reduced and thus the supply is lower. In the case of FX sales, demand on refinancing loans increases. If the lari liquidity provided by FX interventions exceed the volume of refinancing loans, then the NBG will increase the emission of certificates of deposit to sterilize FX intervention.

II.v. Larization

II.v.a. Larization in Georgia

54. Larization shows the share of the usage of the lari in the economy in comparison with all other currencies. Larization is the reverse indicator of dollarization. In a country with an open economy, inflows and outflows of foreign currency are determined by the structure of the economy (for example, international trade or degree of participation in global financial markets). However, excessive usage of foreign currency carries a number of risks that hinder the creation of a sound macroeconomic environment.

55. The economy of Georgia is highly dollarized. Dollarization in Georgia is a result of several factors. Confidence in the national currency as a store of value was lost during the hyperinflation of the 1990s. The level of dollarization was further pushed upwards by the long-time dependence of households on foreign currency inflows (for example, remittances transferred from abroad). The underdeveloped financial market in the country is another factor that explains the high rate of dollarization.

II.v.b. Why is larization desirable

56. The growth of larization is necessary to reduce the country's foreign exchange risk. The high level of dollarization in the economy is one the main macroeconomic risk for the economy. With high dollarization, the function of the exchange rate acting as an absorber of external shocks is weakened. This is because the depreciation of the exchange rate, which is necessary to absorb an external shock, also results in an increased debt service burden for those who have loans in foreign currency and creates additional costs for the economy as a whole.

57. Growth of larization will contribute to increasing the country's sovereign rating. The low level of larization is one of main drawbacks when assessing Georgia's sovereign rating. Improving the country's sovereign rating would mean access to cheaper long-term financial resources.

II.v.c. Measures to support larization

58. Promotion of larization is one of the top priorities of the NBG. The National Bank of Georgia, alike the central banks of other countries with high levels of dollarization, permanently tries to promote the usage of national currency through various measures. These measures encompass improving the instruments and regulations of the NBG, offering increased access to long-term resources in lari, developing the capital market, reducing foreign currency risks, raising public awareness, etc.

59. Increased access to long-term lari resources. Deposits are usually short-term while loans are longer term. One of the main functions of commercial banks, as financial intermediaries, is to make maturity transformation. The goal of the NBG is to contribute to this transformation of short-term resources into long-term loans. For this purpose, sufficient liquid financial collateral needs to be available on the market. This is important as it reduces the liquidity risk for banks and gives them an opportunity to transform short-term liabilities into long-term loans.

60. The NBG will use supervisory and macro-prudential instruments to promote savings and loans in lari. Additional capital is required for banks when a loan is issued in foreign currency and the borrower's income is in GEL.[3] In line with r**esponsible** lending standards, Payment to Income and Loan to Value ratios are different for local and foreign currencies. For the growth of lari loans a number of important legal amendments were enacted, according to which a loans from a single bank valued up to 200,000 lari must be issued only in the national currency. Since LOLR facility is only available in lari, banks need to create additional buffers for systemic liquidity in foreign currency, which is not needed for liabilities in lari. Therefore, the liquidity coverage ratio[4] for liabilities in foreign currency is higher than for liabilities in lari. Besides this, the difference between reserve requirements for lari and foreign currency liabilities makes attracting deposits in lari more profitable.

61. Capital market development. The short-term lari market is sufficiently active in Georgia. A developed treasury securities market can give good momentum for the activation of the capital market. The NBG, in conjunction with the government, continues to work in this direction. Highly liquid securities (so called "benchmark" bonds) have appeared in the market. The main characteristics of these securities are high liquidity and predictability. The launch of a primary dealers institution is planned, which means that the bank participants in treasury securities auctions will be obliged to supply liquidity to the secondary market for all market participants. Besides this, the implementation of the defined contribution pension system will increase social security and contribute to an increase of long-term savings in lari, and therefore support the development of the capital market. Moreover, the enlargement of the collateral base by including

[3] For more details, see "Rules of defining capital buffers for the commercial banks": https://www.nbg.gov.ge/uploads/legalacts/fts/176.04.pdf

[4] Highly liquid assets divided by total net outflow of cash.

corporate securities offers strong stimulus for private firms to issue local currency securities for financing.

62. Since the end of 2016, when the government and the NBG announced a joint larization plan, larization has had a positive trend. Both loan and deposit larization indicators have improved. The reduction of the dollarization of loans to households is especially important, because this is the group most vulnerable to foreign exchange risks. It is therefore noteworthy that the fastest improvement of the larization indicator has been observed in individuals' loans. Larization has also substantially increased in micro-financial organizations.

III. Monetary policy implementation

III.i. The Monetary Policy Committee

63. Monetary policy decisions are reviewed by the Monetary Policy Committee. The committee's decisions are delivered as recommendations to the Governor of the NBG for a final decision. The Monetary Policy Committee consists of the Governor of the NBG, two vice-governors, the executive director, advisers to the governor, and heads of respective departments and divisions.

64. The Monetary Policy Committee meets eight times a year (twice per quarter) following a predetermined schedule (although in special cases an extraordinary session may be scheduled). At those meetings decisions are made about determining the policy rate and other instruments of monetary policy. In particular, the Monetary Policy Committee is authorized to define open market and other monetary and credit operations; decide on emissions and the circulation of its own securities; define minimum reserve requirements calculation and maintenance rules, minimum reserve requirements ratios, interest rates on NBG loans, depository and other monetary operations (besides lender of last resort loans, for which the decision is made by the board of the National Bank); and make decisions about the use of other instruments of monetary and FX policy.

III.ii The main instrument – the monetary policy rate

65. The main monetary policy instrument of the National Bank of Georgia for ensuring price stability is the monetary policy rate (refinancing rate). Changes in the monetary policy rate transmit to aggregate demand, import prices and, ultimately, to inflation through different channels.

66. The Monetary Policy Committee sets the monetary policy rate depending on the inflation forecast. The committee also takes into account current economic developments and conditions in the financial markets. During this decision-making process, the focus is on the medium term. For instance, when the medium-term inflation forecast is below the target level, the NBG loosens

monetary policy and reduces the interest rate. A decrease in the monetary policy rate transmits to interest rates on deposits and loans, which in turn stimulate demand for loans and spending, which then increases inflation. In contrast, if the inflation forecast is above the target, the NBG will tighten monetary policy and increase the policy rate. On the back of the increased policy rate, loans become less attractive and aggregate demand drops, leading to a decrease in the level of inflation in the medium term.

67. Decisions about the monetary policy rate are made according to a Taylor-type reaction function. The monetary policy reaction function ensures that the policy rate changes to a greater extent in response to a deviation of expected inflation from the target and to a lesser extent in response to the GDP gap (deviation of economic activity from its potential level). Furthermore, a certain inertia of monetary policy is taken into account. A gradual change of the policy rate is optimal to avoid excessive reactions in times of uncertainty and to manage long-term interest rates more efficiently.

68. Decisions on monetary policy are focused on the medium-term. This is due to the fact that the full effect of monetary policy decisions is achieved only after about 4-6 quarters. Moreover, small open economies are characterized by frequent exogenous shocks (changes independent of monetary policy) that imply a deviation of inflation from the target level in the short term. Monetary policy is an instrument that influences aggregate demand and thus central banks generally only react to demand-side shocks, because reactions to cost push shocks are usually associated with high output costs and fluctuations in economic growth, resulting in a decrease in the level of employment. Consequently, temporary deviations from the target in the short-term are tolerated so long as inflation is maintained close to the target in the medium-term. The aim of the NBG is to set monetary policy in such a way as to keep inflation close to the target in the medium term.

69. In making forward-looking monetary policy, the key component is the Forecasting and Policy Analysis System (FPAS), which includes several analytical tools, including short-term forecasting instruments, the core macroeconomic model and additional satellite models. The aim of the short-term forecasting model is to forecast the short-term (1-2 quarters) dynamics of the main macroeconomic variables, while the satellite models are used to estimate the components of the real GDP forecast. **The macroeconomic model**, which is the main part of the FPAS, is a semi-structural model based on the New-Keynesian approach. The model is balanced by desired empirical properties and the Dynamic Stochastic General Equilibrium (DSGE) approach. The model incorporates market expectations, which makes it forward looking and allows scenario analysis for monetary policy. The model's equations are structural and each of them has an interpretation in terms of economic theory. The model was designed to meet modern policy requirements and to incorporate special characteristics that fit the Georgian economy (like financial dollarization). It provides possibilities for analyzing a wide range of questions. This model is used to come up with the baseline macroeconomic forecast as well as different risk scenarios. More detailed information about the FPAS can be found in Box 3 below.

Box 3. The Forecasting and Policy Analysis System (FPAS)

Monetary policy decisions are transmitted to the economy only gradually and their impact fully materializes with a certain time lag. Hence, successful implementation of monetary policy requires forward-looking economic analysis, which is based on forecasts. Forecasting, in turn, requires modeling and analysis of the current economic environment using a synthesis of analytical tools and expert judgement.

The NBG's forecasting and monetary policy analysis system incorporates a number of analytical instruments that can be classified into three categories: short-term forecasting instruments, the core macroeconomic model, and additional satellite models. The latter are used to evaluate the cyclical stance of the economy and to estimate the contribution of GDP components to economic growth. That helps the NBG to form expert judgements on various issues.

Short-term forecasting instruments include the Bayesian Vector Autoregresssion (BVAR), Vector Error Correction (ECM), Autoregressive Integrated Moving Average (ARIMA) and factor models. These statistical models are used to forecast the main macroeconomic variables for 1-2 quarters ahead. Short-term forecasts with expert judgements are incorporated into the medium-term forecasting model.

The macroeconomic model, which is the main part of the FPAS, is a semi-structural model based on the New-Keynesian approach. It incorporates the desired empirical properties alongside the Dynamic Stochastic General Equilibrium (DSGE) approach. The model takes into account market expectations in a consistent manner, which makes it forward looking and allows scenario analysis for monetary policy. The model's equations are structural and each has economic meaning. The model also incorporates the special characteristics of the Georgian economy (for example, dollarization).

The model endogenously takes the NBG's monetary policy, as a relevant macroeconomic factor, into account. As such, the model's forecast incorporates the current and expected stance of the NBG. The monetary policy reaction function takes the form of a simple Taylor-type rule and is in accordance with the NBG's objectives as defined by the Organic Law on the National Bank of Georgia.

The specification of the monetary policy rule ensures that the policy rate ($\boldsymbol{i_t}$) changes to a greater extent in response to a deviation of expected inflation from the target $\left(\boldsymbol{\pi_{4,t+4} - \pi^{tar}_{t+4}}\right)$ and to a lesser extent in response to the GDP gap ($\boldsymbol{\hat{y}_t}$). However, since monetary policy should be consistent and because the risks associated with macroeconomic forecasts are high, the interest rate does not change instantaneously. Rather, it is characterized by a certain inertia.

The above factors are embodied in the following functional specification:

$$\boldsymbol{i_t} = \gamma_1 \boldsymbol{i_{t-1}} + (1-\gamma_1)\left[\boldsymbol{i^N_t} + \gamma_2 E_t\left(\boldsymbol{\pi_{4,t+4} - \pi^{tar}_{t+4}}\right) + \gamma_3 \boldsymbol{\hat{y}_t}\right] + \boldsymbol{\varepsilon^i_t} - \gamma_4 \boldsymbol{\varepsilon^{tar}_t}$$

where,

$\boldsymbol{i_t}$ – monetary policy rate

$\boldsymbol{i_{t-1}}$ – monetary policy rate lag

i_t^N – neutral nominal interest rate

$\pi_{4,t+4}$ – expected inflation in the next year

π_{t+4}^{tar} – inflation target for the next year

$\hat{y}_t$ – output gap

ε_t^i – monetary policy shock

ε_t^{tar} – changes in the inflation target shock (disinflation trigger)

Alongside the monetary policy reaction function, the model includes aggregate demand, aggregate supply and uncovered interest rate parity equations.

Demand Side

GDP gap ($\hat{y}_t$) – the difference between aggregate demand and the maximum level of output that can be achieved by the maximum utilization of resources without triggering inflationary processes. It is estimated as real GDP's deviation in percent from its potential level.

The output gap is modeled as being affected by the lagged value ($\hat{y}_{t-1}$), economic outlook ($\hat{y}_{t+1}$); the real effective interest rate ($\hat{r}_t^{eff}$), which is the difference between the nominal interest rate and inflation expectations; the country risk premium ($\widehat{prem}_t$); extra government spending ($\hat{G}_t$); the real effective exchange rate gap ($\hat{z}_t$); and demand shock $\left(\varepsilon_t^{\hat{y}}\right)$. As Georgia is a small and open economy, external shocks are looming. The GDP gap is thus also affected by the foreign GDP gap ($\hat{y}_t^*$). Due to high levels of dollarization, this model also incorporates balance sheet effects through the GEL/USD nominal exchange rate gap ($\hat{S}_t^{GEL/USD}$). The former reflects the impact of debt servicing costs for firms and households on aggregate demand.

GDP gap equation:

$$\hat{y}_t = \alpha_1 \hat{y}_{t-1} + \alpha_2 E_t(\hat{y}_{t+1}) - \alpha_3\left(\hat{r}_t^{eff} + \alpha_4 \widehat{prem}_t\right) - \alpha_5 \hat{z}_t + \alpha_6 \hat{y}_t^* + \alpha_7 \hat{G}_t - \alpha_8 \hat{S}_t^{GEL/USD} + \varepsilon_t^{\hat{y}}$$

Supply Side

In the model, consumer price inflation is represented as a hybrid Phillips curve equation. The following factors have an impact on CPI inflation: imported inflation (π_t^m), oil (π_t^{oil}) and food inflation (π_t^{food}), its lag or inertia (π_{t-1}), inflation expectations (π_t^e), aggregate demand ($\hat{y}_t$), the deviation of the effective exchange rate from its equilibrium level ($\hat{z}_t$) – which represents imported intermediate inputs, and supply-side shocks (ε_t^{π}, $\varepsilon_t^{u^{\pi}}$, $\varepsilon_{t-1}^{u^{\pi}}$ – the former reflects the short-term nature of various supply-side shocks). Due to the high level of dollarization, the exchange rate vis-a-vis the USD is also incorporated into the Phillips curve equation. As already mentioned, exchange rate fluctuations relative to the USD change producers' debt service costs, which ultimately affect prices.

The hybrid Phillips curve has the following form:

$$\pi_t = \beta_1(\beta_2\pi_t^m + (1-\beta_2)[\beta_3\pi_{t-1} + (1-\beta_3)\pi_t^e]) + (1-\beta_1)\left(\beta_4\pi_t^{oil} + (1-\beta_4)\pi_t^{food}\right) + \left(\beta_5\hat{y}_t - \beta_6\hat{z}_t + \beta_7\hat{S}_t^{GEL/USD}\right) + \varepsilon_t^{\pi} + \varepsilon_t^{u^{\pi}} - \rho_l\varepsilon_{t-1}^{u^{\pi}}$$

Uncovered interest rate parity

The nominal exchange rate is modeled using the uncovered interest rate parity. This is essentially a no-arbitrage assumption stating that risk-adjusted yields should be the same in both domestic and foreign markets. Specifically, the interest rate differential ($i_t - i_t^*$) should compensate for the expected future exchange rate depreciation $\left(S_t^{GEL/USD,e} - S_t^{GEL/USD}\right)$ and the country/currency risk premia ($prem_t$). In the equation of the uncovered interest rate parity, the interest rate is in annual terms and expected depreciation is thus also annualized (multiplied by 4). The uncovered interest rate parity equation is presented as:

$$i_t - i_t^* = 4 * \left(S_t^{GEL/USD,e} - S_t^{GEL/USD}\right) + prem_t + \varepsilon_t^S$$

The model also incorporates an endogenous evaluation of the trend levels of real GDP, interest rate and exchange rate. This is crucial for gap estimation, which figure in the main equations. Those are unobservable variables and their evaluation provides additional information for policymakers.

III.iii The operational framework of monetary policy

70. For implementing monetary policy, the National Bank of Georgia uses the monetary policy operational framework that defines the procedures and instruments through which the main objective of maintaining price stability is achieved. The monetary policy operational framework includes liquidity management, the short-term liquidity forecast, monetary policy instruments and collateral management.

71. The operational target for the NBG's monetary policy is the interbank short-term interest rate, changes to which are transmitted to market interest rates, then to the spending behavior of economic agents and finally to the price level. Against this background, the main operational goal of the NBG is to steer short-term interest rate towards policy rate. For this, it is necessary that the liquidity on the interbank market is neither in surplus (at such a point, interest rates would be below the desired level) nor in deficit (at such a point, interest rates would be above the desired level). This goal is achieved with the help of liquidity management instruments.

III.iii.a Liquidity Management

72. The main goal of liquidity management is to ensure that there is neither excess liquidity nor a liquidity deficit in the banking system. For this purpose, the NBG should ensure that each bank has access to adequate liquidity they need and has a possibility to place excess liquidity in market interest rates. For this reason, the NBG uses liquidity providing and liquidity absorbing open market operations together with standing facilities and reserve requirements.

73. On small markets, steering interest rates is much more effective when the system is in a liquidity deficit and central bank supplies liquidity to the system to fill the need. In such cases, banks have the incentive to actively manage their liquidity. Under liquidity deficit if a bank does not adequately manage its liquidity this may result in breach of reserve requirements and the bank will be penalized. On the contrary, in the case of excess liquidity, cost of mismanagement can be expressed as lost interest payments that could have been earned for that excess liquidity. However, because such unrealized interest payments are likely to be relatively small in underdeveloped markets, banks do not often have sufficent incentive for active liquidity management that may hinder market development. For effective liquidity management, it is very important for banking system to have stable demand on liquidity.

74. Liquidity demand of banking system is determined by reserve requirements. For transaction purposes, banks need to have certain amount of liquidity on their corresponding accounts and this amount can vary during a year. Reserve requirements should be higher than transactional needs in order for demand for liquidity to be stable over time. Currently, the reserve requirement is 5% for funds raised in local currency with a remaining maturity of one year; however, this requirement will be gradually reduced in the future.

75. In the event of excess liquidity, the NBG uses liquidity absorbing instruments. By issuing certificates of deposit, the NBG absorbs medium-term excess liquidity from the system. To absorb liquidity the NBG issues three-month certificates of deposit or sells government securities at its disposal.

76. The NBG supplies liquidity via liquidity providing instruments to meet liquidity needs of the banking system. Via one-week refinancing loans and one-month open market operations, the NBG provides the market with sufficient amount of liquidity that would ensure that the market interest rate is close to the targeted monetary policy rate. Over time, demand on refinancing loans has substantially increased. Banks have gradually begun to use refinancing loans actively in liquidity management that resulted in increased efficiency of financial system and volatility of market interest rates decreased (see Figure 1).

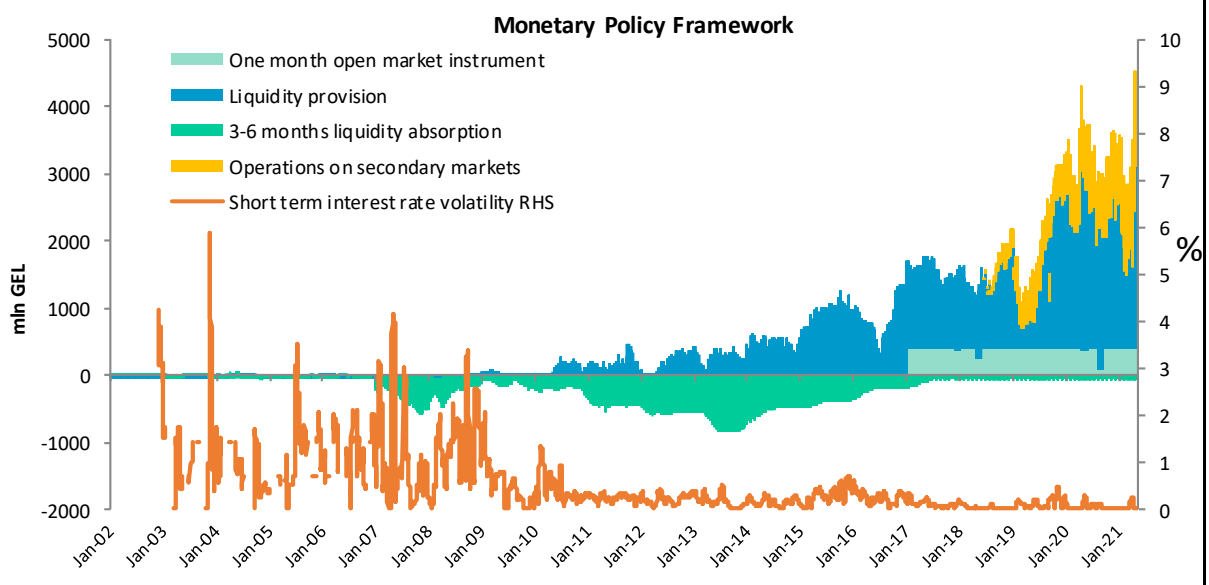
77. Interest rate corridor is set around the policy rate that is made of rates for standing facilities - overnight loans and overnight deposits. The existence of an interest rate corridor ensures a low volatility in interbank interest rate. The corridor should be sufficiently narrow to ensure a low volatility, but sufficiently wide to give incentives to banks to actively trade on the interbank market. Taking the abovementioned into consideration, there is a +/-0.75 percentage-point corridor around the policy rate. Standing facilities give opportunities to commercial banks, without prearranged approval from the NBG, to place liquidity on an overnight deposit or to take an overnight loan. Regardless of whether these standing facilities are actively used or not, their existence ensures low volatility of interbank interest rates. When liquidity is needed, each bank first tries to obtain resources from the interbank market, from those banks with excess liquidity, and then they go for refinancing loans. The efficiency of the interbank market is thus very important for the monetary policy transmission mechanism.

78. To monitor the interbank interest rate, the NBG uses the TIBR (Tbilisi Inter Bank Rate) index, which is the interest rate on overnight noncollateralized interbank loans. This index is based on overnight agreements, because this is the most liquid part of the interbank market. The fact that

the index is based on actual deals gives it credibility (see Box 4). The TIBR index is published daily at 09:00 a.m. on the NBG website. The methodology of the index and historical data are available at the following link:

https://www.nbg.gov.ge/index.php?m=544&lng=eng

Figure 1 Liquidity management and volatility of interest rates



Source: The National Bank of Georgia

Box 4. The reformed money market index – TIBR

From 1 August 2018, the National Bank of Georgia (NBG) started publishing a reformed money market index – the TIBR (Tbilisi Inter Bank Rate). Money market indices play a key role in the financial system and in the economy as a whole, as they are used for pricing different financial instruments such as floating rate bonds, bank loans and derivatives. Money market interest rate benchmarks allow for better pricing transparency, risk allocation between market participants and interest rate risk management. The TIBR index is important for implementing monetary policy as the index acts as an operational threshold for that policy, which means that the NBG is trying to steer TIBR close to the policy rate. Money market indices are widely used in the global financial system as benchmarks (orientation price) for a large volume and a broad range of financial products and contracts. The reformed TIBR methodology includes index calculation and publishing rules, as well as its control mechanisms. The methodology was introduced with the assistance of the European Bank for Reconstruction and Development

(EBRD) and was undertaken in close partnership with market participants. The TIBR is based on actual deals, which is something that will eventually increase its credibility. An additional benefit to the index is the fact that information gathering and calculation will be undertaken by the NBG. The index calculation methodology will also be regularly reviewed to ensure that it remains adequate.

The TIBR index facilitates the development of a more efficient, liquid market and a stronger and more sustainable financial system. Prior to August 2018, floating instruments were mainly linked to the monetary policy rate or to the three-month certificates of deposit of the NBG. The NBG hopes that the renewed TIBR index will facilitate the development of a lari interest rates derivatives market and that the index will replace existing indices as an interest rate benchmark for cash markets and derivatives instruments in the nearest future.

III.iii.b Short-term liquidity forecasting

79. Decisions about volumes of liquidity supply are made on the basis of short-term liquidity forecasts. For the NBG, the aim of such forecasts is to determine the short-term liquidity needs of the banking system over the next week. Based on this information, refinancing loan auctions are announced for an amount that ensures the system has adequate liquidity that would create neither a deficit of liquidity nor a surplus.

80. The liquidity forecast is delegated by the Monetary Policy Committee to the Liquidity Forecasting Group. The latter consists of employees from the divisions of monetary policy and monetary operations. The Liquidity Forecasting Group regularly collects information and conducts short-term liquidity assessments on a weekly basis. A decision about the volume of refinancing loans and the auction of one-month instruments is made the day before the auction and then it is shared with banks.

81. The Liquidity Forecasting Group assesses both the demand for liquidity from banks and the sources of autonomous liquidity supply, which include the following components: (a) reserve requirements (RR); (b) cash in circulation (CIC); (c) net foreign assets (NFA); (d) net claims on government (Gov); (e) open market operations on the secondary market (OMO); and (f) other items net (OIN). The change in liquidity required for the system can be shown by the formula:

$$\Delta Liq = \Delta RR + \Delta CIC - \Delta NFA - \Delta Gov - \Delta OMO - \Delta OIN$$

Where Δ represents the change.

82. Reserve requirements (RR). As there is a two-week interval between the end of the calculation period of reserve requirements and the beginning of a new maintenance period of required reserves, the volume of mandatory reserves is known to the NBG in advance.

83. Cash in circulation (CIC). One component determining the autonomous liquidity supply is cash in circulation. An increase in demand for cash (i.e. cash withdrawals from banks) causes a decline

of liquidity and vice versa. Seasonal factors have the biggest effect on demand for cash in the short run – these include days when salaries, pensions and allowances are paid, as well as the last day of the week and holidays. These factors are taken into consideration while making the short-term liquidity forecast. A time series model (ARIMA) is also used for projecting demand for cash.

84. Change in net foreign assets (NFA). The change in net foreign assets is determined by FX interventions and other FX transactions by NBG; thus, the purchase of FX will cause an increase in foreign assets, which will increase GEL liquidity in the system. Selling FX decreases liquidity.

85. The net claims on government (Gov). The most important source of autonomous liquidity supply is the net claims on government. This item is influenced by budget revenues and expenditures. During the forecasting, the within month seasonality (specifically the timings of pension and tax payments) of income and expenditures will be taken into consideration. For example, spending on pensions, which are carried out on the 10th-11th of each month, are significant in volume and lead to a sharp increase in liquidity supplied by autonomous sources. In contrast, on tax payment days, liquidity in the banking system is reduced. The Memorandum of Understanding (MoU) between the National Bank of Georgia and the Treasury of the Ministry of Finance has been signed that enables a mutual exchange of data. Based on the MoU the Treasury delivers short-term forecasts for the flow of funds on the Treasury single account to the NBG.

86. Open market operations on the secondary market (OMO). These operations affect the liquidity supply to the banking system and should be taken into account in the liquidity forecast. Open market operations are carried out by the NBG and therefore the date and the nominal value of auctions are known in advance. Information on securities to be repaid is based on the results of auctions held in the past.

87. Other items net (OIN). Other items net reflect changes in the capital and reserve and the revaluation accounts of the NBG. Changes in this component are known to the NBG in advance and do not affect liquidity.

III.iii.c. Monetary policy instruments in detail

Figure 2 Monetary Policy Instruments

Monetary Policy Instruments		Purpose	Maturity	Participants	Interest Rate
Open Market Instruments	Refinancing loans	Liquidity supply	1 week	Commercial banks	At minimum monetary policy rate, determined at the auction by multi price method
	1 month open market instrument	Liquidity supply	1month	Commercial banks	At minimum monetary policy rate, determined at the auction by multi price method
	Certificate of deposits	Liquidity absorption	3 months	Commercial banks	determined at the auction by multi price method
1 day Loans		Liquidity supply	1 day	Commercial banks	Monetary policy rate plus 0.75 p.p
1 day deposits		Liquidity absorption	1 day	Commercial banks	Monetary policy rate minus 1.75 p.p
Minimum reserve requirements		Support of monetary policy	14 days	Commercial banks	Reserve requirement*: GEL - 5%; foreign currency - 25%

*reserve requirements are different according to the remaining maturity.

Source: The National Bank of Georgia

88. Open market operations are the main instrument for managing liquidity in the banking system. Depending on their objective, open market operations are broken down into two categories – liquidity supply and liquidity absorbing instruments. By providing refinancing loans, one-month open market instruments and asset purchase, GEL liquidity is supplied to banks. While, through the sale of certificates of deposit and treasury securities, liquidity from the banking system is absorbed.

89. One-week refinancing loans are the main instruments for providing liquidity. With one-week refinancing loans the NBG supplies liquidity to the banking system in the volume that is demanded. On a weekly basis, the Liquidity Forecasting Group estimates the short-term liquidity deficit in the banking system. Based on that forecast, the NBG announces an auction for a specific amount of refinancing loans. As a result, the NBG achieves a targeted short-term interest rate on the interbank money market.

90. Refinancing loans are issued through auctions in which any commercial bank can participate. Auctions are held every week and the maturity of the loans offered is exactly one week. As a rule, the auction for refinancing loans is held every Wednesday at 11:30 a.m. One day in advance, notification about the auction is sent to all commercial banks. The notification contains all relevant details: the auction date, the volume of auction, the interest rate floor, loan issuance and repayment dates, types of loan collateral and the haircut[5], the time for bidding on the auction, and the platform for the auction. The auction is run using the multi-price method and the minimum interest rate banks can bid equals the monetary policy rate. In their official bids, each commercial bank declares the desired amount of the loan and the offered interest

[5] The difference between the collateral value and amount of a loan.

rate. Within the announced auction volume the commercial banks' bids are satisfied by decreasing order starting from the highest interest rates. Immediately after the auction is completed, the results are published in the Bloomberg system on the NBG's page.

91. Refinancing loans are disbursed against proper collateral, which might be government securities, NBG certificates of deposit, local currency denominated bonds issued by international financial institutions (IFIs), local currency denominated bonds issued by resident and non-resident legal entities, and commercial banks' own loan assets in the national currency. A haircut is assigned to each type of collateral. The haircut varies according to the remaining maturity of securities and the credit rating of the issuer of securities. Credit rating has to be approved by international credit agencies.

92. Loans via one-month open market instrument are provided on a monthly frequency. All commercial banks can participate in these auctions. The Liquidity Forecasting Group estimates the liquidity deficit, which is then used as the basis for the volume of one-month open market instrument offered at auction. As a rule, the auctions for one-month open market instrument are held once every four weeks, on Wednesdays at 10:30 a.m., one hour before the auction for refinancing loans. Notification on forthcoming auctions is sent to all commercial banks one day prior to the auction. The notification contains all details, including the auction date, the volume of auction, interest rate floor, loan issuance and maturity dates, types of collateral that are accepted and the haircut for each of them, the time for bidding on the auction, and the platform for the auction. In their offers, commercial banks state the volume of loan they request and the interest rate. The minimum interest rate banks can bid equals the monetary policy rate. Within the announced auction volume the commercial banks' bids are satisfied by decreasing order starting from the highest interest rates. Immediately after an auction is completed, the results are published in the Bloomberg system on the NBG's website.

93. Loans via open market instrument are issued against proper collateral, which can be government securities, NBG certificates of deposit, local currency denominated bonds issued by international financial institutions (IFIs), local currency denominated bonds issued by resident and non-resident legal entities, and commercial banks' own loan assets. The haircut varies according to the remaining maturity of securities and the credit rating of the issuer of securities. Credit rating has to be approved by international credit agencies.

94. Open market operations on secondary markets. To provide the necessary liquidity to the banking system, the NBG also uses open market operations in the secondary market. Namely, the NBG purchases government securities on the secondary market. Unlike the regular operations, where liquidity with one-week and one-month maturities are supplied, the purchase of securities on the secondary market allows the NBG to supply the banking system with longer term liquidity, tailored to the maturity needs of the market. Operations on the secondary market are carried out by auctions that take place every Wednesday. Only commercial banks can participate in these auctions. One day prior to the auction, the NBG sends notification to all commercial banks about the auction that includes information about the auction date, time, the volume of securities to be purchased/sold, their maturity, settlement and repayment dates, and time and means of bids to be made. Every week, based on the methodology for calculating the GEL yield curve, the

theoretical benchmark interest rate is calculated and determined for each treasury securities. In secondary market auctions, the winning bids will be determined in the following steps:

a. For each bid the spread between the interest rate of that bid and theoretical benchmark interest rate of the security in question is calculated.

b. The bids are placed:

   i. By a decreasing order of the spread, in the case of a purchase auction;

   ii. By an increasing order of the spread, in the case of a sales auction.

c. First of all, the first bid from the list is satisfied, then the following bids. The auction is completed when the volume of offers equal the auctioned volume.

95. Certificates of deposit are used for absorbing medium-term liquidity from the banking system. The issue and placement of certificates of deposit is based on the auction mechanism, which are held once a month on Wednesdays. Commercial banks, as well as international financial institutions operating through commercial banks, can participate in the auctions. At least one day prior to the auction, the NBG sends all relevant information to the commercial banks, including details about the auction date, time, the volume of certificates of deposit to be auctioned, their maturity, settlement and repayment dates, and time and means of bids to be made. The yield on certificates of deposit is determined on the multi-price auction. The volume and interest rate for each bid is determined by the commercial bank. Within the announced auction volume the commercial banks' bids are satisfied by increasing order starting from the lowest interest rates. Immediately after the completion of the auction results are published on the NBG's website. The NBG only offers three-month certificates of deposit.

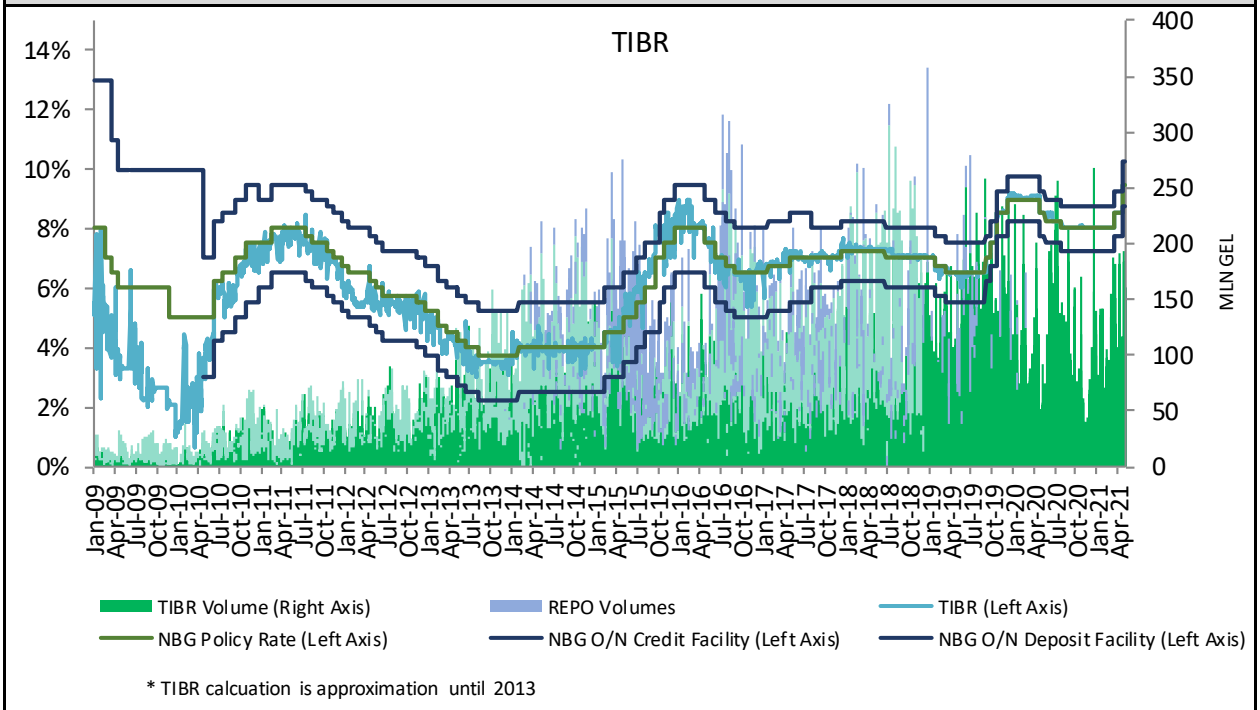
96. With open market operations the NBG maintains adequate liquidity in the banking system, which is part of the mandate of the central bank. Hence, volatilities in liquidity do not cause volatilities in interest rates. This has positive effect on long-term lending and therefore supports economic growth. Thanks to these instruments, long-term GEL loans with low interest rates can be offered to the market. Such loans were not available several years ago.

97. With overnight deposits, the NBG sets the floor for interest rates on the money market. The interest rate on overnight deposits is determined as the monetary policy rate minus 1.75 percentage points. Commercial banks decide on the volume of overnight deposits. These deposits can be placed by any commercial bank, without prior notice, on any banking day during operational hours. Placement and withdrawal of overnight deposits are done using the RTGS system. The NBG will transfer the principal and accrued interest on overnight deposits to the corresponding account of the commercial bank at the beginning of next business day.

98. With overnight loans, the NBG sets the ceiling interest rate on the money market. The interest rate on overnight loans is determined as the monetary policy rate plus 0.75 percentage points. Commercial banks can take overnight loans without prior notice. A commercial bank should make a request for an overnight loan via the CSD system before 17:40. This does not require the NBG's approval and the commercial bank's corresponding account will be credit immediately. The repayment of the principal and accrued interest is done before the end of the working day. Overnight loans are issued to commercial banks against proper collateral.

99. Overnight deposits and overnight loans form the interest rate corridor within which short-term interbank interest rates are kept. Hence, the deviation of interbank rates from the policy rate is reduced. The NBG uses a symmetric interest rate corridor. Initially, the NBG used an interest rate corridor of 4 percentage points, but this was gradually reduced to 2 percentage points, thereby reducing interest rate volatility and supporting an increase of the efficiency of the interbank market even further. As seen on Figure 3, interest rates on the interbank market hover around the monetary policy rate.

Figure 3 Interbank interest rates



Source: National Bank of Georgia

100. With intraday loans, commercial banks can borrow the necessary liquidity from the NBG and repay back the same day. Intraday loans support banks in managing their daily liquidity when there is a time gap between inflows and outflows on correspondent account. For example, when a commercial bank intends to transfer 100 million GEL and is expecting 100 million GEL inflow during the same day, then there is no need for additional liquidity. However, if the inflow of that money is delayed, then the transfer of money would also be delayed in the absence of free liquidity. To avoid such delays in the banking transactions, a commercial bank can use intraday loans, receiving the money and repaying back the loan the same day. Intraday loans do not accrue any interest and thus banks avoid additional costs for managing liquidity. Borrowing and repaying intraday loans is done via the RTGS system throughout the day. The volume of intraday loans borrowed and the day its use are determined by commercial banks. The repayment of outstanding intraday loan is done automatically as soon as the money is credited to the corresponding account of the commercial bank; however, if a commercial bank is unable to repay the intraday loan before the end of the day, then the loan is transformed as an overnight loan.

The volume of intraday loan is not restricted, but it is provided only against collateral that is same as for refinancing loans.

101. Minimum reserve requirements are determined separately for national and foreign currency liabilities and they have different roles. For national currency liabilities banks have to have required reserves on their correspondent accounts on average during maintenance period. While for foreign currency liabilities the reserve requirements have to be kept on specially designated blocked accounts.

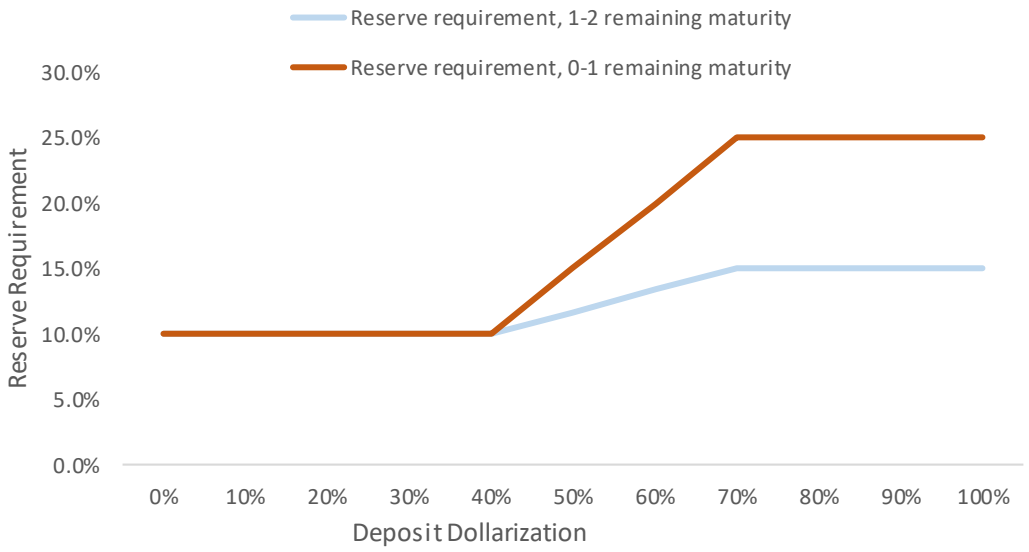
102. Reserve requirements for national currency liabilities create necessary ground for efficient use of other monetary instruments. Reserve requirements create stable short-term liquidity demand from banking system that is easy to forecast, and the NBG then meets that demand by supplying sufficient liquidity. This improves the transmission of monetary policy to the interbank rates and, ultimately, is reflected in an improved monetary policy efficiency. In addition, holding required reserves as an average stock enhances liquidity management by banks, and thus reduces the need for holding excess liquidity.

103. The minimum reserve requirement ratio for national currency liabilities is 5%. No reserve requirements are required for borrowed funds in the national currency with the remaining maturity longer than one year. Commercial banks are obliged to maintain a minimum reserve requirement at the NBG for a 14-day maintenance period as an average balance on their correspondent account. The NBG remunerates required reserves and remuneration rate equals the policy rate.

104. The reserve requirements for funds attracted in a foreign currency up to 1 year remaining maturity is in the range of 10% to 25% (depending on the deposit dollarization rate of a particular commercial bank). The reserve requirements do not apply to funds borrowed in foreign currency with remaining maturity of over 2 years. For funds borrowed in foreign currency with remaining maturity from 1 to 2 years, the reserve requirement is in the range of 10% to 15% (depending on the deposit dollarization rate of a particular commercial bank) . Capital, and funds equalized to capital, are exempt from the required reserve norms. The required reserves for foreign currency liabilities are deposited on foreign currency reserve accounts at the NBG. Commercial banks have to have required reserves on reserve account for a 14-day period and banks cannot use it during this period. Reserve requirements in US dollars and euro are kept in respective currencies, for other currencies – in US dollars. For US Dollar required reserves remuneration rate is set at the Fed rate minus 0.5 percentage points. For euro required reserves remuneration rate is set at the deposit rate of the European Central Bank (ECB) minus 0.2 percentage points.

105. By changing reserve requirements for foreign currency liabilities the NBG can influence interest rates in foreign currency. For example, an increase in reserve requirements would have the effect of tightening monetary policy. This is the only monetary policy instrument that allows the NBG to influence lending in foreign currency and foreign currency interest rates.

Figure 4 Reserve Requirements



Source: National Bank of Georgia

Box 5 Additional Liquidity Instrument6

To counter the Covid-19 pandemic, the National Bank launched temporary liquidity instruments to reduce potential liquidity risks in the financial sector

Since April 2020, the NBG launched **FX swap operations** which are available not only for commercial banks but also for the microfinance organizations, 200 million USD for each sector (total 400 million USD).

The period of use the FX swap operations was initially set for commercial banks - from April 15, 2020 to April 15, 2021; for microfinance organizations - from April 15, 2020 to October 15, 2021. In the spring of 2021, the period was extended to April 15, 2022.

In the spring of 2020 he NBG activated the **stand-by swap instrument**, which enables to get the additional liquidity at a penalty rate.

The stand-by swap instrument was launched from May 1, 2020. The validity of the instrument is one month, with the possibility of monthly renewal. The term of usage of this instrument was originally set until May 1, 2021, but In the spring of 2021 was extended to May 1, 2022.

The Liquidity Instrument to support SMEs was launched on June 1, 2020 and consists of two components. The first is for commercial banks, which can receive GEL liquidity from the NBG using small and medium business loan portfolios as collateral. The second is for microfinance institutions, which, through commercial banks, can attract GEL resources from the NBG.

The instrument is valid until December 31, 2023, with a gradual reduction from May 2022.

[6] https://www.nbg.gov.ge/uploads/publications/annualreport/2021/annual_report_2020_nbg.pdf, page 67. https://www.nbg.gov.ge/index.php?m=539

III.iii.d Collateral management

106. Availability of sufficient financial collateral is necessary for the effective functioning of the interbank market. Twice a year, the National Bank of Georgia makes assessment of collateral sufficiency of banking system for the next two years. When making these assessments, the main macroeconomic variables affecting money market development are taken into account such as GDP growth, inflation, growth of credit portfolio, level of dollarization, etc. In case the demand for collateral is higher than the projected volume of collateral on the market, the NBG will work with the Government of Georgia on possibilities of additional supply of financial collateral, on one hand and it will also consider an expansion of the collateral base acceptable for the monetary operations on the other.

107. Issues related to acceptable collateral for monetary operations of the NBG is regulated by the "Regulation on Collateral Management of the National Bank of Georgia"[7]. The types of securities used for the lending operations of the NBG are: (i) debt securities issued by the National Bank of Georgia and the Government of Georgia; (ii) debt securities issued by international financial institutions; (iii) debt securities of resident and non-resident legal entities issued in accordance with the Law of Georgia "on the Securities Market"; (iv) the loan assets of commercial banks; and (v) foreign currency deposits at the National Bank of Georgia. The securities issued by the National Bank of Georgia and the Government of Georgia comprise of (i) certificates of deposit of the National Bank of Georgia; (ii) Treasury bills of the Government of Georgia[8]; (iii) Treasury Notes of the Government of Georgia[9]; and (iv) government bonds of the Government of Georgia[10]. The regulation states criteria of each type of collateral acceptable in monetary operations in detail, and defines assets used as collateral for each monetary operation as well.

108. The above listed collateral used for monetary operations are subject to certain risk controls. For this purpose, the National Bank of Georgia uses haircuts. The ratios of refinancing loan and the interest accrued on it, and/or the overnight loan and/or the intraday loan to the value of collateral are the following:

[7] https://www.nbg.gov.ge/uploads/legalacts/monetarypolicy/2019/collateral_regulation_2_20180404_ge.pdf
[8] Treasury securities with less than 1 year maturity
[9] Treasury securities with more than 1 year maturity
[10] Medium-term (16 to 60 months) government securities

Assets eligible as a collateral for the loans of the National Bank of Georgia	Long-term credit rating of the securities issuer				
	S&P, Fitch and Scope Ratings scale	Moody's scale	Less than 2 years	From 2 to 5 years	More than 5 years
Lari denominated debt securities issued by either the Government of Georgia or the National Bank of Georgia	-	-	95%	95%	95%
Lari denominated debt securities issued by an International Financial Institution	AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	95%	95%	95%
	A+, A, A-, BBB+, BBB	A1, A2, A3, Baa1, Baa2	90%	90%	90%
Debt securities issued in accordance with the Law of Georgia "on Securities Market" by resident and non-resident legal entities and securities issued as a private placement before 1 January 2018, denominated in lari	AAA < BBB-	AAA < Baa3	90%	85%	80%
	BB+ < BB-	Ba1 < Ba3	85%	80%	75%
	B +	B1	80%	75%	70%
Loan Assets	-	-	80%	80%	80%
FX Deposits at the NBG	-	-	80%	80%	80%

III.iv. The monetary policy transmission mechanism

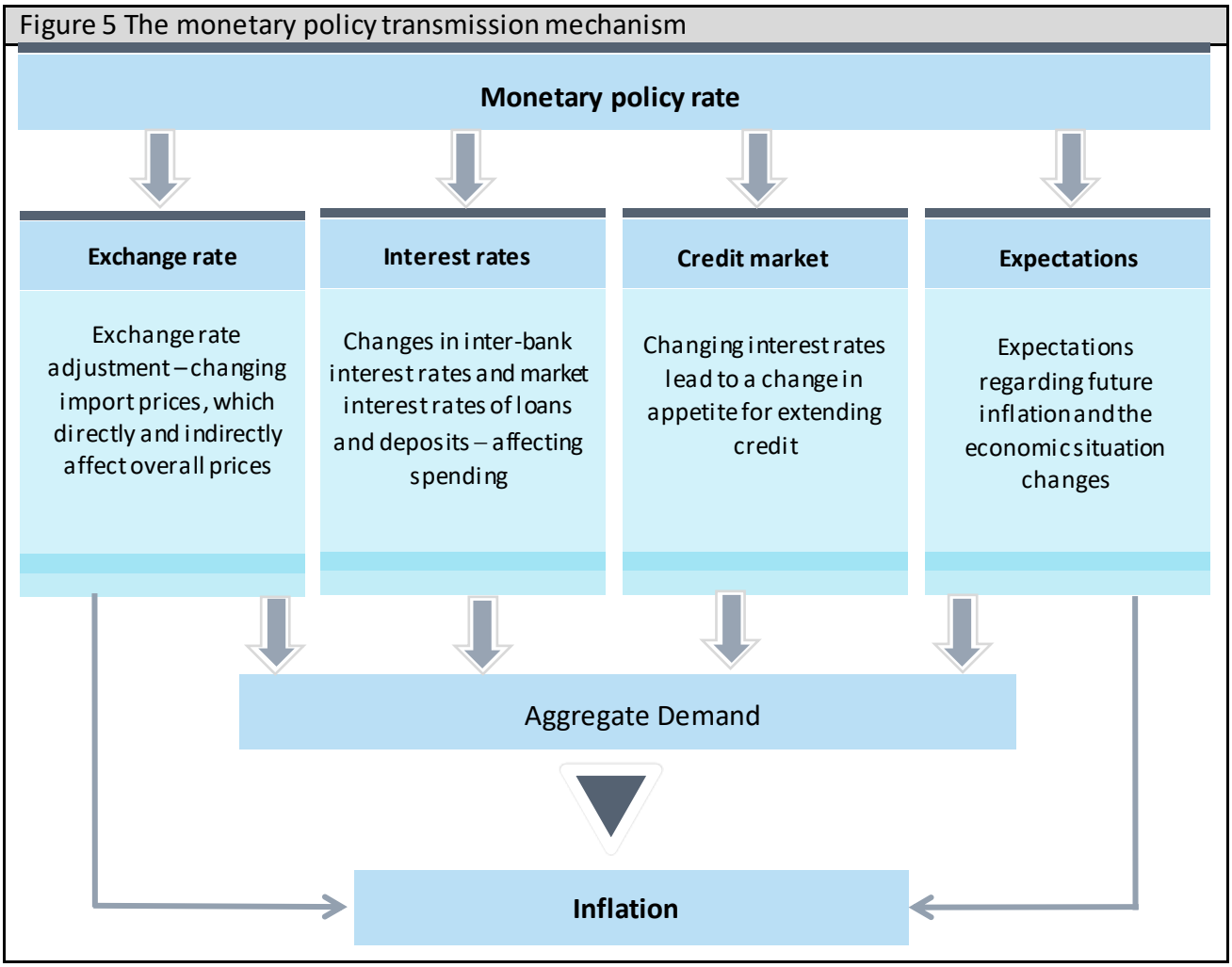
109. Under the inflation targeting regime, the policy rate is the main instrument of the NBG's monetary policy. With the policy rate, the NBG influences economic activity and, ultimately, inflation, through different channels. The economic literature defines this process as the monetary policy transmission mechanism.

110. Monetary policy decisions first influence money market interest rates, which are then further reflected on the interest rates of different financial instruments. At the same time, those decisions affect the expectations of economic agents and, consequently, their behavior. Changes in the policy rate affect the price of securities as well as the exchange rate of the domestic currency.

111. These changes subsequently affect the expenditure, saving and investment behaviors of individual firms and households. For instance, increased market interest rates stimulate savings and make credit less attractive as the cost of debt services increase. As a consequence, aggregate demand falls, leading to a decline in inflation.

112. Monetary policy affects aggregate demand through different channels in Georgia. Those are: (i) the interest rate channel; (ii) the credit channel; (iii) the exchange rate channel; and (iv) the expectations channel (see Figure 5). It should be noted that changes in the monetary policy rate affect the economy with a time lag and decisions taken today can only influence future inflation. The policy rate changes are transmitted to the money market immediately, while on the price level they are only fully reflected after 4-6 quarters.

Figure 5 The monetary policy transmission mechanism



113. The interest rate channel affects aggregate demand and, ultimately, the price level through affecting demand for loans and savings. A rise in the NBG policy rate will be directly reflected on the short-term interbank interest rates. A change in short-term interest rates will then be transmitted to longer term rates and will eventually spread to the interest rates on bank

lending. Increased interest rates stimulate savings and reduce investment and consumption expenditures through reducing demand for loans. This process, ceteris paribus, tightens aggregate demand and facilitates a decline in inflation. It should be noted that due to the high level of dollarization of the Georgian economy, the scope of the interest rate channel is limited mostly to national currency loans and by changing the policy rate the NBG cannot directly influence interest rates on foreign currency loans.

114. The credit channel influences aggregate demand and, ultimately, the price level through changes in the credit supply. An increase in the policy rate is eventually transmitted to the money market, which will affect long-term interest rates. Increased interest rates limit the availability of credit, reduce the amount of creditworthy projects, and lead to a reduced extension of bank credit in the economy. Ultimately, this affects aggregate demand and the general price level.

115. At the same time, the increase in interest rates leads to a moral hazard problem as there will be greater incentives to engage in riskier investment activities to earn higher returns. The rise of interest rates is a signal for commercial banks that risks in the economy have increased and credit conditions should tighten. The raised interest rates lead to an increase in the debt service-to-income ratio, which motivates banks to switch to a more conservative approach when granting credit. Consequently, bank lending in the economy will decline, resulting in a drop of aggregate demand and, hence, of prices.

116. Changes in interest rates affect the aggregate price level through the exchange rate channel as well. All else held equal, an increase in the interest rate raises demand on domestic currency money market instruments and leads to the appreciation of the national currency. In other words, as lari money market instruments become more attractive and, consequently, as demand for lari assets increase, exchange rate appreciates. Changes in the exchange rate influence the price level in both direct and indirect ways – through imported goods as well as though consumption switching.

117. Appreciation of the exchange rate reduces the price of imported goods and, vice versa, a depreciation of the national currency makes imported goods more expensive. It should be noted that appreciation and depreciation do not change the price level symmetrically: depreciation results in a larger change in prices than appreciation of a similar magnitude. Interest rate changes are quickly transmitted to consumer prices through the direct exchange rate channel.

118. Exchange rate changes also affect inflation level indirectly. Appreciation of the exchange rate stimulates demand for imported goods; as the relative prices of imported goods decrease, they become more attractive. At the same time, an appreciated domestic currency makes exports more expensive, resulting in a decrease in external demand. Thus, the overall aggregate demand of the country decreases.

119. Expectations are especially important under the inflation targeting regime. Economic agents make decisions based on their expectations about the future. Therefore, inflation

expectations might have a strong influence on actual inflation. For instance, households decide how much to spend or save today depending on their expectations about future consumption. Also, firms determine the volume of investments based on production capacity. Such decisions will eventually determine aggregate demand, which is then reflected in actual inflation.

III.v. Monetary policy communication

120. Communication is an important instrument of monetary policy. Communication with the financial sector and general public plays a central role in monetary policy making. The importance of communication has increased considerably during the last decade. Communication improves monetary policy efficiency, which helps to achieve the NBG's primary goal of price stability.

121. Monetary policy communication helps to better anchor inflation expectations. Especially when actual inflation differs from the target, effective communication with the public helps to form and maintain expectations around the target level. That, in turn, helps inflation to return to the target level in an easier and more efficient way.

122. Communication makes the monetary policy stance more predictable. When a central bank has active communication with the public, then its monetary policy decisions are not a surprise for market players and the financial market thus displays less volatility. In particular, market participants take into account expected monetary policy decisions in advance.

123. Communication helps strengthen monetary policy transmission to long-term interest rates. Monetary policy transmits to long-term interest rates through short-term rates and its expected future path. Therefore, the formation of consistent expectations plays a central role in this process. This can be achieved through active communication. For that purpose, the NBG publishes the expected trajectory of its future monetary policy rate. It is worth noting that the forecast of the monetary policy rate is not a commitment from the NBG regarding its future decisions. It only reflects the expected trajectory of the policy rate based on the current data and forecasts made at the time. If unanticipated exogenous shocks hit the economy, then the expected trajectory of the monetary policy rate will be changed accordingly.

124. Development of various communication channels is one of the NBG's main priorities. The NBG uses a range of communication tools, including publications, press releases, press conferences, media channels and meetings with target groups. As a result, awareness about the NBG's main goals is enhanced. Active and regular communication also increases the NBG's credibility and makes the future monetary policy stance more predictable, which ultimately improves the formation of consistent expectations.

125. The main tool for monetary policy communication is the quarterly Monetary Policy Report. The Monetary Policy Report includes forecasts of the monetary policy rate, inflation and economic growth. When inflation forecasts differ from the target level, the report also reviews the reasons behind such deviations. The report presents risks to the predicted outlook and indicates what the monetary policy response would be in the event of those risks materializing.

Alongside the publication of the Monetary Policy Report, a short explanatory video is uploaded to the NBG's website in which the Governor of the NBG describes decisions regarding the monetary policy rate and provides a brief overview of the forecasts. In addition, a document describing the Forecasting and Policy Analysis System (FPAS) is publicly available.[11] This document describes the short-term forecasting models, core macroeconomic model and additional satellite models to give the public an opportunity to understand the NBG's forecasting approaches in greater detail.

126. Following its publication, the Vice-Governor of the NBG presents the Monetary Policy Report to market analysts. Representatives of commercial banks, companies, research organizations and analysts are invited to a meeting where the vice-governor presents the major issues analyzed in the report. Video footage of such meetings are subsequently uploaded to the NBG's website.

127. In 2016, the NBG moved to a new phase of communication and started to publish the trajectory of the monetary policy rate forecast (conventional forward guidance) in the Monetary Policy Report. It is worth noting that the forecast of the monetary policy rate is not a commitment from the NBG regarding its future decisions. It only reflects the expected trajectory of the policy rate based on the current data and assumes that all exogenous factors incorporated into the forecast materialize as expected. Forward guidance has made the future monetary policy stance more predictable and has strengthened monetary policy transmission to long-term interest rates.

128. Upon completion of Monetary Policy Committee (MPC) meetings, press releases about the decisions taken on the monetary policy rate are published on the NBG's website. These press releases review the reasons behind the decisions and reveal the expected trajectory of the future monetary policy rate.

129. Since 2016, the NBG started to hold regular press conferences. Once in a quarter (after every second MPC meeting) the NBG holds press conferences where the governor announces the MPC's decision on the policy rate. The governor explains the reasons behind the decision, reviews the economic outlook, and addresses the factors that have an impact on inflation and the main determinants of future price developments. Meanwhile, representatives of the media have an opportunity to ask questions. To further enhance credibility and increase awareness about what the central bank is doing, the NBG holds quarterly press conferences in different regions of Georgia.

130. The NBG often conducts meetings with financial market representatives, journalists, students, etc. Such meetings are part of the NBG's communication strategy. The aim of these are to enhance public awareness about the NBG's objectives and activities and to support financial education.

[11] FPAS documentation can be accessed at the following link: https://www.nbg.gov.ge/index.php?m=648&lng=eng

131. Once per year, the NBG presents its annual report to Parliament. This report describes the measures implemented during reporting period and their results, and reviews the NBG's views on economic and financial sector stance.

132. The NBG maintains high level of transparency. The Dincer-Eichengreen transparency index is a widely accepted measure used for evaluating a central bank's transparency. It evaluates transparency in five categories: political transparency, economic transparency, procedural transparency, policy transparency and operational transparency. Based on this methodology, the maximum level of the index is 15. Dincer-Eichengreen research indicated that the NBG's transparency index was 8 in 2014. Subsequently, the NBG paid particular attention to improving its transparency and took several steps to make the central bank more transparent. As a consequence of these actions, according to the same methodology, the NBG's transparency index for 2018 was 13. This result is very close to ratings of central banks in such developed countries as the Czech Republic, Sweden and New Zealand. The increase of economic transparency was particularly significant, which rose as a result of a number of specific developments. In 2016, the NBG started to publish its future trajectory of the monetary policy rate. The NBG also published a document describing the Forecasting and Policy Analysis System, where the short-term forecasting models, core macroeconomic models and satellite models are discussed in detail.