



საქართველოს ეროვნული ბანკი
National Bank of Georgia

Financial Stability Report 2019



Preface

The Financial Stability Report is an annual publication issued by the National Bank of Georgia (NBG). It presents an assessment of vulnerabilities and risks in the financial system, with a focus on the medium to long-term, structural features of the financial sector and the aspects of the Georgian economy that are of importance for financial stability. It also analyses the domestic financial system's resilience and overviews the policies and measures undertaken by the Financial Stability Committee (FSC) in order to support financial stability.

Financial system is stable when it can provide crucial services to market participants in both good and bad times. It is the cornerstone for the sustainable development of the economy.

The National Bank of Georgia continuously aims to ensure that the financial system is safe and sound given its mandate that is defined by the Organic Law of Georgia.

The analysis draws on data available up to 30 June 2019 unless otherwise stated.

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Financial Stability Report 2019

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Executive Summary

Georgia has experienced a sustained period of macroeconomic stability and economic growth and, reflecting this, the financial system is in good shape. The banking system is well capitalized, liquid and profitable. Asset quality is also strong with non-performing loans representing less than 3 percent of the lending portfolio.¹

However, there are some important headwinds facing the financial system. Georgia is a small open economy. Despite recent improvements in the current account deficit, it still stands at a high level, and thus Georgia remains dependent on external sources of finance. This means that Georgia is very sensitive to global and regional growth shocks and shifts in global financial conditions. Also, the financial system in Georgia is still highly dollarized, which exacerbates the impact of these shocks. Even though Georgia's vulnerability has been decreasing, downside risks stemming from global markets have built up. Global growth forecasts have been scaled-back recently and international trade has declined, partly fueled by rising trade tensions among the world's largest economies. In addition, the outlook for some countries in the region is also highly uncertain. As a result, Georgia runs the risk that these global and regional factors might translate into slower domestic growth. However, these challenges can be addressed by maintaining reasonable macroeconomic policies.

The vulnerability of the household sector to changes in economic circumstances in Georgia is particularly high. However, it has been diminishing recently due to implemented policy measures. It should be noted that the excessive growth of the household debt has been slowing down, credit standards have been improving, and dollarization has been diminishing. Despite the improvements, the vulnerability of the households is still high, which is a result of rapid growth and high level of the household debt in recent years. Moreover, much of this debt has been taken out by households that already devote large parts of their income to debt servicing. When these debts are in foreign currency, households are very sensitive to exchange rate movements. The financial health of the household sector matters not only for this sector, but also for the overall financial stability. Mortgage and personal lending represent 55 percent of total bank lending, so the financial system is directly exposed to households that default. However, there is also the potential for damage stemming from stressed households that manage to avoid default but cut-back on their spending, including on consumption. This can damage economic prospects and, by extension, harm the financial system.

Corporate sector balance sheets are in a good shape in aggregate. Profitability has been generally strong and there has only been a modest tick-up in corporate sector leverage in recent years. However, the composition of corporate sector debt warrants attention. Much of this debt is foreign currency denominated, which businesses find difficult to hedge. There has also been considerable reliance on short-term funding, which would pose rollover risks should financial conditions tighten.

Property markets always warrant careful attention from a financial stability perspective. In Georgia, property pricing is opaque and it is difficult to accurately assess real estate conditions. However, according to the information available to the NBG, there is no evidence of a real estate price bubble in Georgia. The available data suggests that the demand for housing has been growing strongly on the back of improved affordability. The increase in demand has been matched by a pick-up in construction. Indeed, the main risk for the property market ap-

1 Based on International Monetary Fund (IMF) methodology.

appears to be one of potential over-supply, should households find reason to cut-back on their purchase of real estate. This means that commercial banks need to continuously monitor their exposure to property developers very closely.





The NBG has implemented a number of macroprudential policy measures in support of financial stability over the past year. In response to concerns about the pace of credit expansion and the debt-servicing capacity of households, the NBG has introduced responsible lending regulations. These regulations set loan-to-value (LTV) limits on the size of mortgage loans relative to the value of property; and payment-to-income (PTI) limits to restrict the size of debt service payments by households to a fixed share of their income. Early evidence suggests that these measures have helped moderate the increase in household indebtedness and reduce the related risks.

The NBG has also continued its efforts to reduce the high level of dollarization. It has done so on several fronts. When imposing the LTV and PTI limits, distinctions were made between loans denominated in GEL and those in foreign currency, with tighter restrictions placed on the latter. Also, according to the best international practice, higher reserve requirements have been imposed on foreign currency deposits; and, similarly, the liquidity coverage ratio (LCR) – the proportion of highly liquid assets that must be held by banks to meet their short-term obligations – has been set at higher levels for foreign currency obligations than for local currency.

The NBG's macroprudential efforts have been assisted by government actions. A cap has been introduced on effective lending rates for both banks and non-banks to protect more vulnerable households from predatory lending practices. Moreover, the decision was taken to amend the Civil Code so that loans of less than 200 000 GEL can only be issued in domestic currency. This will help protect households against foreign currency risk and will also help reduce the dollarization of the financial system. In addition, NBG's supervision and regulation have been extended to non-banking financial institutions, which has allowed the NBG to introduce macroprudential measures for those entities.

Finally, efforts to improve the resilience of the financial system are a continuous work-in-progress. This is being achieved through a combination of macroprudential measures, focused on the banking system as a whole, and microprudential measures which strengthen the position of individual financial institutions. All banks have been required to supplement the minimum capital requirements with a conservation buffer and individual banks are subject to a range of capital add-ons, including those to protect against unhedged currency and portfolio concentration risks. The NBG has also introduced an additional capital buffer for the three banks that it considers to be systemically important. The liquidity position of the banking system is also to be further strengthened by the introduction of a Net Stable Funding Ratio (NSFR) this year, which will reduce the reliance of banks on unstable short-term funding sources and thereby lead to a decreased exposure to the risk of sudden funding outflows.

The following table summarizes the major financial stability risks facing the Georgian economy.

The Main Risks to Financial Stability	Magnitude/Change						
<p>Regional instabilities arising from political and economic tensions and strained relations with Russia. Georgia’s economic prospects are closely tied to those of its regional neighbours, particularly Russia and Turkey. The economic instabilities in the region coupled with prolonged Russian restrictions against Georgia has the potential to de-rail domestic growth prospects and increase credit risks within Georgia’s financial system.</p>							
<p>A slowdown of global growth caused by rising trade tensions and policy uncertainties. This may result in an increase in global risk aversion and a corresponding decline in cross border investment and trade flows. The risk appetite towards developing markets, including Georgia, would decline and risk premia would be repriced upwards. Lower demand for Georgian exports and diminishing FDI would induce exchange rate volatility and increase the debt burden. The associated rise in credit risk would amplify the contraction through tighter lending conditions.</p>							
<p>The vulnerability of the household sector to economic shocks due to a rapid increase in household debt to historically high levels. As a sizable share of household debt is owed by borrowers with overstretched debt-servicing capacities, household spending is highly sensitive to income and confidence shocks. Moreover, a considerable portion of household loans issued to unhedged borrowers remains in foreign currency, which makes household spending and financial health highly vulnerable to exchange rate movements.</p>							
<p>A cyclical downturn in the property market. The labour and investment intake in the real estate and construction sectors is rapidly increasing due to strong demand driven by eased credit conditions, rapidly growing tourism industry and optimistic house price expectations. As the demand is predominantly cyclical, if the economy enters a downturn, the excess labour and investment concentration in these sectors could lead to an increase in unemployment, a deterioration in debt servicing ability as well as negative spillovers to the rest of the economy.</p>							
<p>1 = minor risk and 6 = major risk. The arrow indicates changes in the risk level from the previous year</p>							
<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="background-color: #28a745; color: white;">≥1</td> <td style="background-color: #6c757d; color: white;">≥2</td> <td style="background-color: #ffc107; color: white;">≥3</td> <td style="background-color: #fd7e14; color: white;">≥4</td> <td style="background-color: #dc3545; color: white;">≥5</td> <td style="background-color: #800000; color: white;">≥6</td> </tr> </table>		≥1	≥2	≥3	≥4	≥5	≥6
≥1	≥2	≥3	≥4	≥5	≥6		

I. Macro-Financial Environment and Outlook

The global economy is slowing. The escalation of trade tensions/protectionism, increasing risk premia, and rising policy uncertainty are all contributing to elevated risks for the global financial system. Downside risks are particularly pronounced in the region due to geopolitical tensions and possible sanctions. The above-mentioned external developments pose risks to the domestic macro-financial environment.

Global growth has moderated and remains subdued, while downside risks have increased.

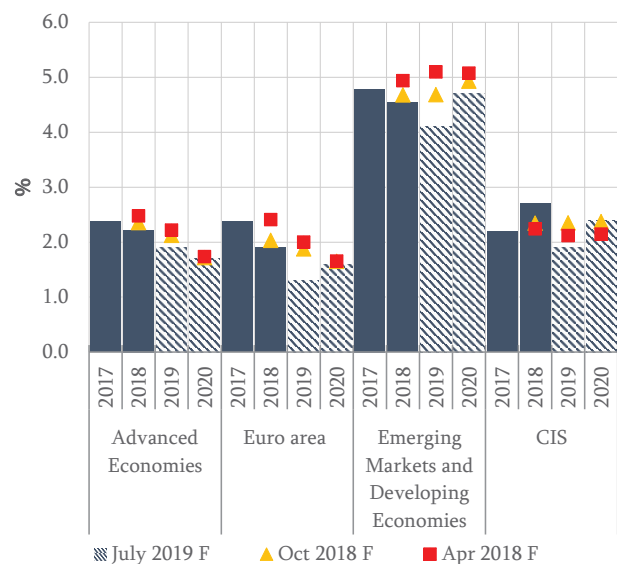
The IMF projects global growth of 3.2 percent in 2019, rising to 3.5 percent in 2020.² The projection for 2019 is 0.5 percentage points (pp) lower than the forecast in October 2018. This downward revision reflects a decline in the growth rates of advanced economies, particularly of those in the euro area, as well as a slowdown in emerging markets and developing economies (see Figure I.1). Protracted Brexit-related uncertainties, continued trade policy tensions, possible disruptions in technology supply chains and geopolitical turmoil have all contributed to the weaker-than-anticipated global activity.

The global outlook comes with several downside risks. Escalation of trade tensions between the United States and China may worsen business sentiment and cause a slowdown in investment. Meanwhile, mounting risk aversion and a prolonged period of low interest rates both contribute to the build-up of financial vulnerabilities. In addition, disinflationary pressures due to economic slowdowns constrain monetary policy to counteract adverse shocks. If these risks materialize, global growth will be affected, especially influencing those countries with vulnerable external positions.

Downside risks are particularly prominent in the region as a consequence of escalated geopolitical risks and adverse economic conditions. The economic outlook for some of Georgia's regional trading partners is deteriorating, mainly because of uncertainties about the Russian economy and the economic downturn in Turkey. Turkey is suffering from a prolonged build-up of imbalances, unsupportive economic fundamentals and political tensions. These have triggered a sharp depreciation of the Turkish lira, high inflation, sharply weakened domes-

² See World Economic Outlook (WEO), July 2019, IMF.

Figure I.1. Economic Growth in Selected Group of Economies



Source: WEO database.

tic demand and worsened investor sentiment. Meanwhile, economic recovery in Russia has been proceeding slowly and is likely to depend on the outlook of oil and other commodity prices, both of which depend on global demand.

Despite increased uncertainties concerning the prospects for Turkey and Russia, the economic outlook for Georgia's trade partners is projected to be stable. According to the IMF, the weighted average growth of trade partners³ is expected to be around 2.0-2.7 percent for 2019-2021 (see Figure I.2). Georgia's economic growth is within the upper quartile of the distribution of trading partners' economic growth. The comparatively lower economic growth forecast for

³ These trading partners comprise of the countries with the largest shares in Georgia's external inflows. They include the euro area, Russia, Turkey, Azerbaijan, Armenia, the United States, Ukraine and China. The weights correspond to their shares in Georgia's total external inflows.

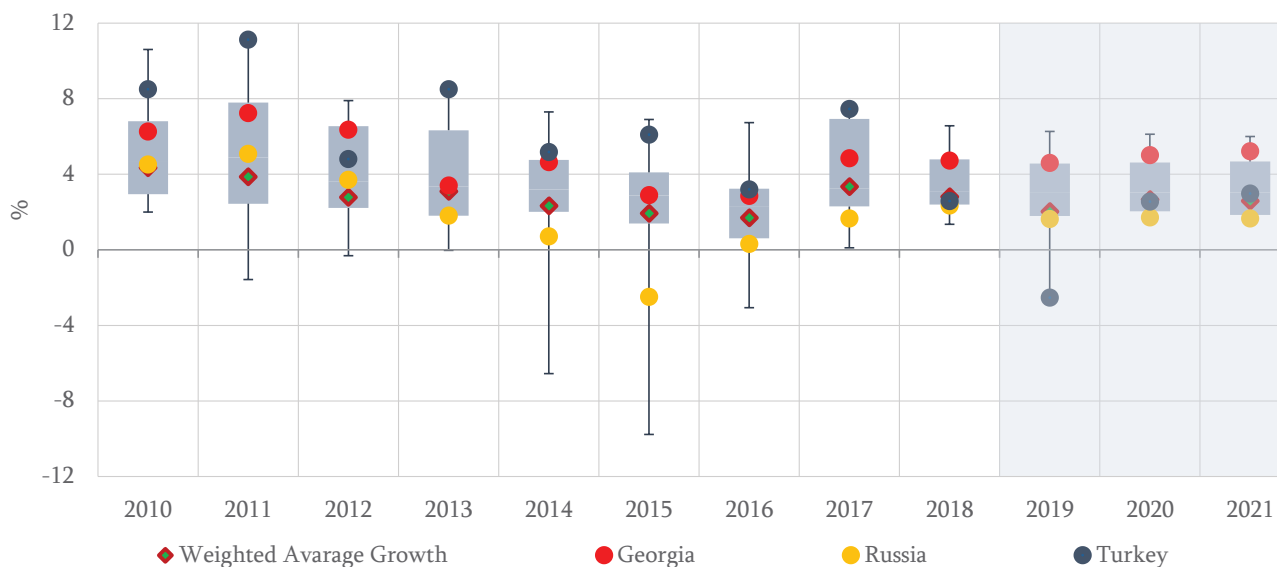
Georgia’s trade partners can predominantly be explained by the modest growth outlook in Russia and Turkey, which jointly account for 27 percent of Georgia’s total external inflows.

The contribution of net exports to Georgia’s GDP growth is rising and the economy is now more exposed to external developments. Favourable external demand has been the main driver of economic growth since 2017. By contrast, domestic demand has been relatively weak, reflecting negative output gap (see Figure I.3). Among the external factors a fall in money transfers and tourist revenues from Turkey and Iran also contributed to the subdued economic activity during 2018.

The increase in external inflows from Russia in recent years has increased the exposure of Georgian economy to Russia. Russia suspended all direct flights to Georgia from the beginning of July 2019. Russia accounts for 26 percent of Georgia’s total international travel receipts, with an estimated value added of around 2 percent of real GDP.⁴ The imposed restrictions do not extend to non-air travellers, which account for 75 percent of tourists from Russia. Given all these circumstances, the impact of these restrictions on the economic growth in 2019 is expected to remain within 0.5 pp. The ultimate impact will depend on the Georgian tourism industry’s ability to attract more visitors from other destinations.

In summary, the economic outlook for Georgia remains solid, but downside risks to growth are now more visible. Real GDP growth for 2019 is expected to be around 4.5 percent.⁵ The primary driving force behind that economic growth will be consumption, with the contribution of net exports falling in response to weaker external demand and the restrictions imposed by Russia. Among domestic factors, the growth of aggregate demand and credit activity remain the main sources of uncertainty. As for external factors, the worsened global economic outlook combined with a deterioration of the geopolitical environment in the region will both weigh upon GDP growth. The risks stemming from a possible tightening of financial conditions due to increased sovereign risk premia in the region would lead to a decrease in financial inflows. The latter would negatively affect business sentiment and investment, and thereby contribute to lower-than-expected economic activity. A deterioration of the current account due to reduced external inflows may dampen confidence and contribute to higher exchange rate volatility in the short run. In the medium term, however, flexibility of the exchange rate would facilitate recovery by gradually improving the current account.

Figure I.2. Growth Distribution of Main Trading Partners of Georgia



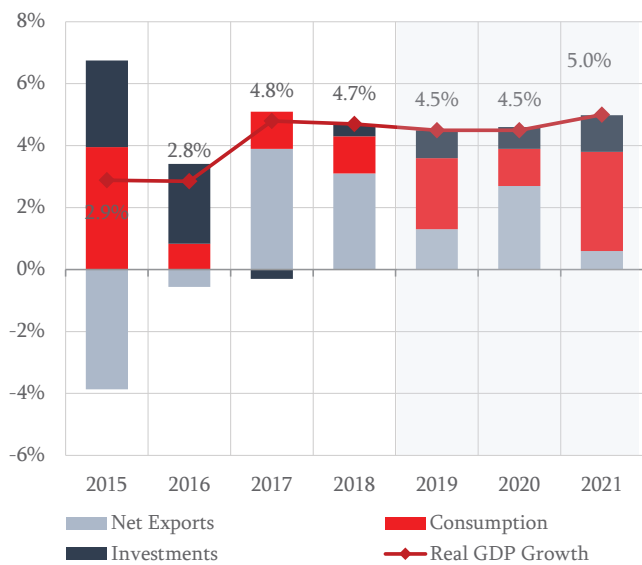
Source: WEO, NBG staff calculations.

4 This estimate is based on the Georgian National Tourism Administration’s assessment. See <https://gnta.ge/statistics/>

5 For a more detailed forecast, please see the NBG’s Monetary Policy Report of July 2019. <https://www.nbg.gov.ge/index.php?m=349&lng=eng>

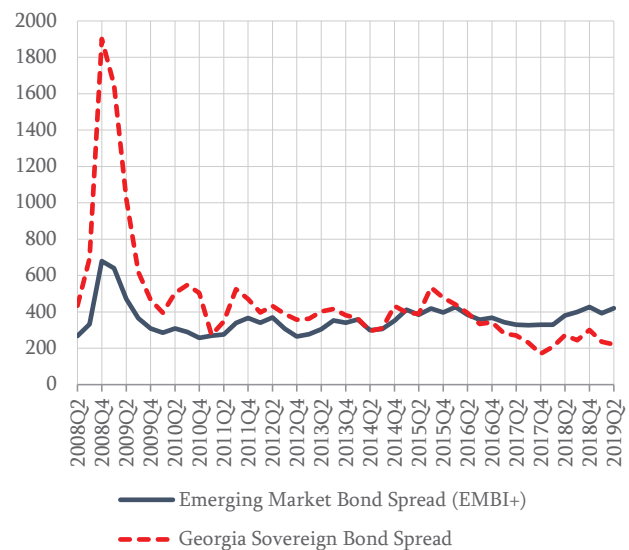
Financial conditions across the world remain relatively accommodative. Moreover, there are signs that the easy monetary policy in advanced economies will be sustained for longer than had been anticipated. This reflects intensifying trade tensions, vulnerabilities in emerging markets, higher risk aversion and worsening financial sector sentiment. After the sharp tightening in the second half of 2018, financial conditions have somewhat eased recently. The current dynamics on financial markets are driven by both the Fed’s and the ECB’s decisions to prolong accommodative monetary policy. Sentiment in global markets is also being influenced by the actions of the Chinese authorities to support growth through the targeted easing of fiscal, monetary and macroprudential policies. While accommodative financial conditions are supportive of growth in the short term, they do run the risk of fuelling longer-term vulnerabilities in the global economy.⁶ Sovereign yields in both emerging markets and advanced economies have declined as a consequence of increasing risk aversion combined with deteriorating sentiment about growth prospects and shifts in policy expectations. Moreover, foreign currency credit spreads have widened for most countries. A further slowdown of the global economy or the realization of other policy uncertainties around the world could trigger those vulnerabilities. This will result in higher risk premia and capital outflow from emerging markets as a result of their high degree of sensitivity to global factors. Currently, emerging markets’ yields remain at a low level, as a result to low risk-free rates. However, the spreads in emerging markets have recently started to increase (see Figure I.4). Moreover, as yields are still at historically low levels, the risk of a further increase in risk premia remains.

Figure I.3. Decomposition of Real GDP Growth by Expenditure, YoY



Source: NBG.

Figure I.4. Sovereign Bond Spread (basis points)



Source: Bloomberg Database

6 For a more comprehensive discussion of this topic, please see Box 1. Financial Conditions and Growth-at-Risk in Georgia.

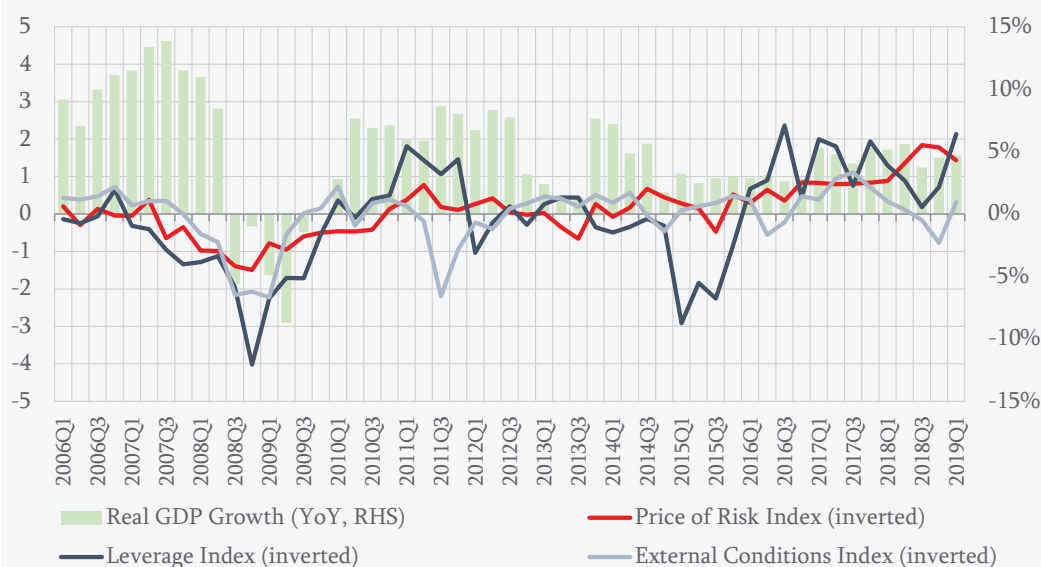
Box 1. Financial Conditions and Growth-at-Risk in Georgia

Forward-looking analysis, which relies on predicting possible developments in the macro-financial environment, is an integral part of the financial stability assessment process. Since baseline forecasts fail to account for the risks around central tendencies, they may provide an overly optimistic outlook about the future prospects of the economy. From the financial stability point of view, it is essential to have a grasp of the likelihood of adverse growth outcomes and their potential magnitude, as the amplification mechanisms in the financial sector are predominantly responsible for output growth vulnerabilities. In order to estimate the impact of current economic and financial conditions on the distribution of future growth outcomes of the Georgian economy, the Growth-at-Risk (GaR) approach⁷ has been implemented. This approach has been developed by the IMF to assess the impact of different risks on economic growth.

According to the GaR methodology, relevant macro-financial variables are normalized and aggregated into broader indices using supervised dimensionality reduction methods.⁸ This ensures that the forecasting model is parsimonious and that the estimated common trends are clean from idiosyncratic noises and are able to differentiate adverse future growth outcomes. Given the characteristics of the Georgian economy and the financial system, the following indices have been constructed:

Index	Components	Risks and Vulnerabilities
Price of Risk	<ul style="list-style-type: none"> Credit market interest rate spread Residential real estate price change 	Domestic / Short term
Leverage	<ul style="list-style-type: none"> Credit to GDP ratio change Return on equity in the banks 	Domestic / Medium term
External Conditions	<ul style="list-style-type: none"> CBOE Volatility Index (VIX) Nominal effective exchange rate change 	Global and Regional change

Figure B1. Financial Conditions Indices



Source: Geostat; NBG staff estimates.

7 Adrian, T., Boyarchenko, N., and Giannone, D. 2017. "Vulnerable Growth." Federal Reserve Bank of New York: Staff Reports.

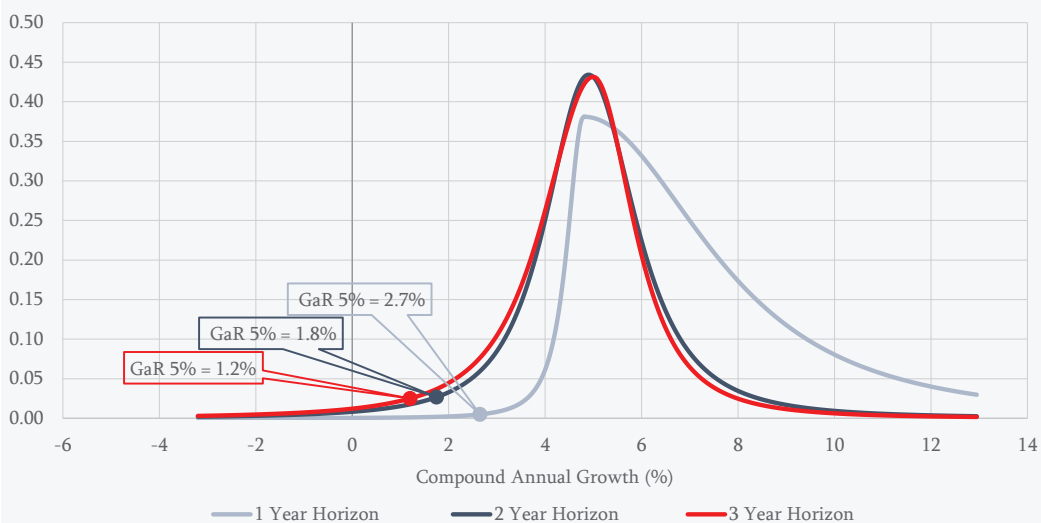
8 For this exercise we implement linear discriminant analysis (LDA) as it is done in the Growth-at-Risk excel toolkit, developed by R. Lafarguette and C. Wang (2018), IMF.

The estimated indices cover domestic as well as external vulnerabilities and the risks of output growth for the short- and medium-term horizons. In general, tighter financial conditions, which cause increases in the corresponding indices, are associated with a decline in output growth in the near term. The indices provided clear early warning signals a year before the economy plunged into the recession during 2007-2008 Global Financial Crisis (see Figure B1).

Next, in order to estimate the conditional quantiles of future output growth distributions, GDP growth is regressed on the estimated three indices using quantile regressions. The fitted model is tailored to reflect the main risks and vulnerabilities of the Georgian economy. Finally, for each forecast horizon, the estimated conditional growth quantiles are transformed into probability density functions using a parametric fit (skewed t-distribution). The location of the obtained probability density functions of future GDP growth are conditioned on the baseline growth forecasts made by the National Bank of Georgia, while the scale, fatness and shape of the distributions are determined endogenously (see Figure B2).

The GaR analysis indicates that tail risks over a one-year period are modest, but tend to increase over longer horizons. Current financial conditions seem rather loose as the market interest rate spread is below its historical average, housing prices do not show any sizable movements, the increase in leverage is balanced by balance sheet buffers and the volatility in global markets is diminishing. Correspondingly, the 5 percent GaR over a one-year period (the value of the forecasted growth distribution to be breached once in 20 cases) is only 2.7 percent and the probability of recession⁹ is 0.07 percent. However, due to increased uncertainty over longer horizons, the left tail of the forecasted growth distribution fattens indicating higher vulnerabilities. Over the two-year horizon, the 5 percent GaR becomes 1.8 percent and the probability of recession increases to 1.7 percent. Whilst over a three-year horizon, the 5 percent GaR drops to 1.2 percent, while the probability of recession goes up to 2.7 percent. Overall, the assessment of tail risks based on the GaR approach shows that growth vulnerabilities are moderate under current financial conditions as the 5 percent GaR was found to be positive over all of the considered time horizons. However, currently accommodative financial conditions may contribute to the build-up of growth vulnerabilities over the medium term manifested in higher tail risks over longer forecast horizons.

Figure B2. Conditional Density Forecast of GDP Growth (input data cut off: March 2019)



Source: NBG staff estimates

⁹ In the GaR framework probability of recession is defined as the probability of forecasted GDP growth attaining a negative value over the given forecast horizon.

II. Vulnerabilities and Risks Affecting Financial Stability

External Vulnerabilities

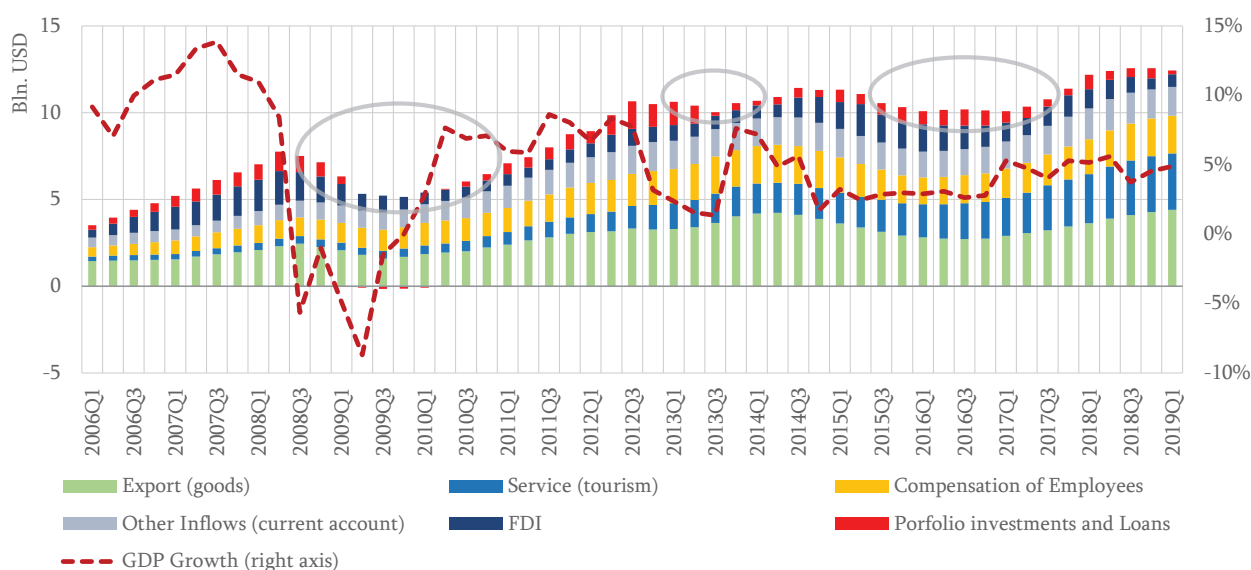
The fact that Georgia is a small open economy with a high level of dollarization, a current account deficit and a financial sector that is integrated into international financial markets makes the country's financial system vulnerable and sensitive to global economic and financial trends. Given these structural vulnerabilities, Georgia is exposed to risks stemming from the global macro-financial environment including downside risks of global growth; worsening of geopolitical and economic conditions in the region; and a repricing of risk premia for emerging countries.

Georgia is characterized by a number of structural vulnerabilities that makes it exposed to external developments. Georgia is a small open economy with a high level of dollarization, a current account deficit and increasing dependence on international financial flows. All of which exposes the country to external developments. A slowdown of global growth, policy uncertainties and regional spillovers can all trigger external vulnerabilities in Georgia. Developments in the international environment transmit risks to domestic financial stability through two main channels. On the one hand, a tightening of financial conditions caused by increased risk premia in emerging economies makes lending in foreign currency more costly from the supply side. Moreover, it can discourage financial inflows. On the other hand, vulnerabilities in trading partner economies, mainly in Russia and Turkey, can result in a slowdown

of exports of goods and services as well as remittances. The latter implies a deterioration of the external balance and volatility of the exchange rate if the slowdown is significant.

Georgia is increasingly dependent on international financial flows (see Figure II.1). Historically, the main source of financial flows has been exports of goods. However, tourism has steadily become another significant contributor in recent years. Increased financial flows support economic growth, but they also make the economy more exposed to developments in trading partner countries. Previous episodes of declining inflows (as indicated in the circled areas on Figure II.1), which were accompanied by domestic imbalances, show that these can have a material effect on GDP growth. Therefore, financial inflows channel is one way through which a negative outlook for Georgia's

Figure II.1. Balance of Payment Inflows in Georgia



Source: NBG, GeoStat.

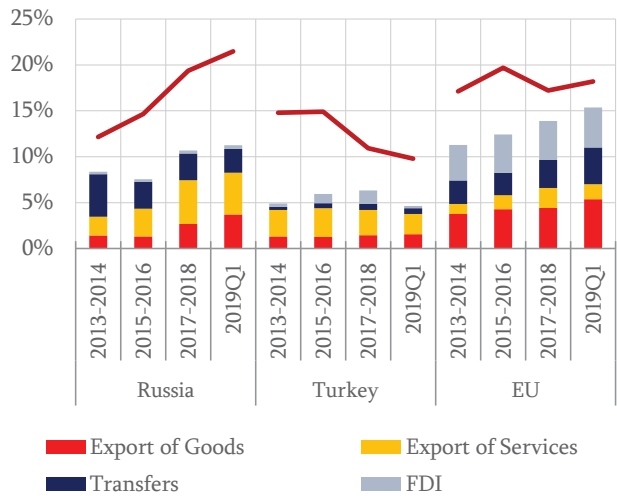
main trade partners, combined with a fragile geopolitical environment, can be transmitted to the domestic economy and create risks for financial stability.

Georgia is highly exposed to developments in Turkey, Russia and EU countries. As of the first quarter of 2019, these countries account for 47 percent of Georgia’s total exports and 53 percent of total external inflows. The negative spillover on the Georgian economy coming from the Turkish crisis of 2018 was limited because it was balanced by increased inflows from other countries, mainly from Russia. Georgia’s exposure to external inflows from Russia has increased in recent years, with the current share standing at around 20 percent of Georgia’s export of goods and services (see Figure II.2). Such increased exposure to the Russian market bears the risk of a sudden drop in external inflows as was demonstrated by Russia’s recently imposed restrictions on air travel to Georgia. A downside revision of economic growth in the EU would also put inflows at risk, as the EU currently accounts for about 25 percent of total inflows in Georgia.

The current account (CA) balance improved in 2018 as the export of goods and services and the volume of remittances increased substantially, albeit leading to increasing dependence on some markets. The CA improvement is expected to be sustained in 2019, although some downside risks prevail. A possible deterioration of the economic environment in the region may result in a repricing of risk premia and capital outflows. Increased risk premia can have negative spillover effects on the financial markets and the current account. In the case of Georgia, the CA deficit is mostly financed through non-debt instruments, particularly FDI (see Figure II.3). The latter accounts for almost half of the Net International Investment Position (NIIP), which is close to the average for emerging market countries. The smaller share of portfolio investment in the NIIP means that Georgia is likely to be less exposed to any repricing of risk premia and sudden capital outflows. However, negative risk premium shock can still be transmitted to Georgia indirectly from its trading partners through the CA. If a shock causes a depreciation of partner countries’ currencies and adversely affects the real sectors of their economies, it may reduce export earnings in Georgia.

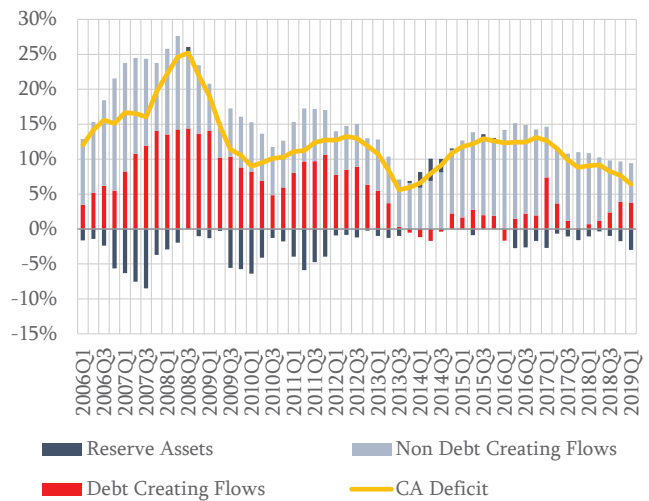
A potential rise in risk premia and the subsequent depreciation of the domestic currency may trigger debt sustainability problems by increasing debt-servicing costs. Georgia’s external debt-to-GDP ratio has been stable in recent years, although, standing at a histori-

Figure II.2. Exposure to Major External Markets (flows are expressed as a share of GDP)



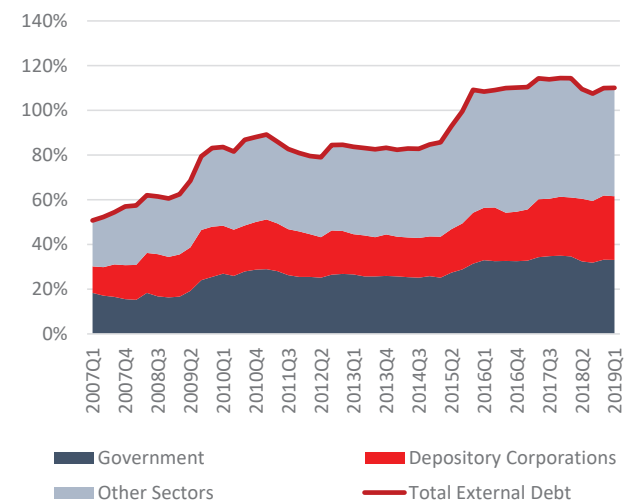
Source: NBG, Geostat.

Figure II.3. CA Deficit and Sources of Financing (% of GDP)



Source: NBG.

Figure II.4. External Debt (% of GDP)

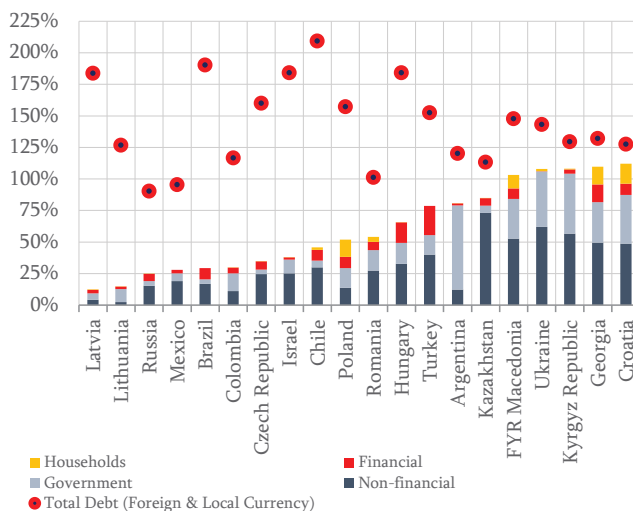


Source: NBG.

cally elevated level (see Figure II.4). External debt in Georgia is mainly denominated in foreign currency and is thus largely exposed to foreign exchange (FX) risk. Such FX risks were highlighted during the 2015-2016 depreciation of the GEL that resulted from unfavourable external conditions in the region. While Georgia's total debt is not high relative to other emerging market economies, the share of foreign currency (FC) debt for almost all types of borrowers is one of the highest among peer countries (see Figure II.5). However, it should be noted that a sizable share of Georgia's external debt is borrowed from international financial institutions on concessional terms. Debt service burden for such loans is lower than the amount implied by the market rates.

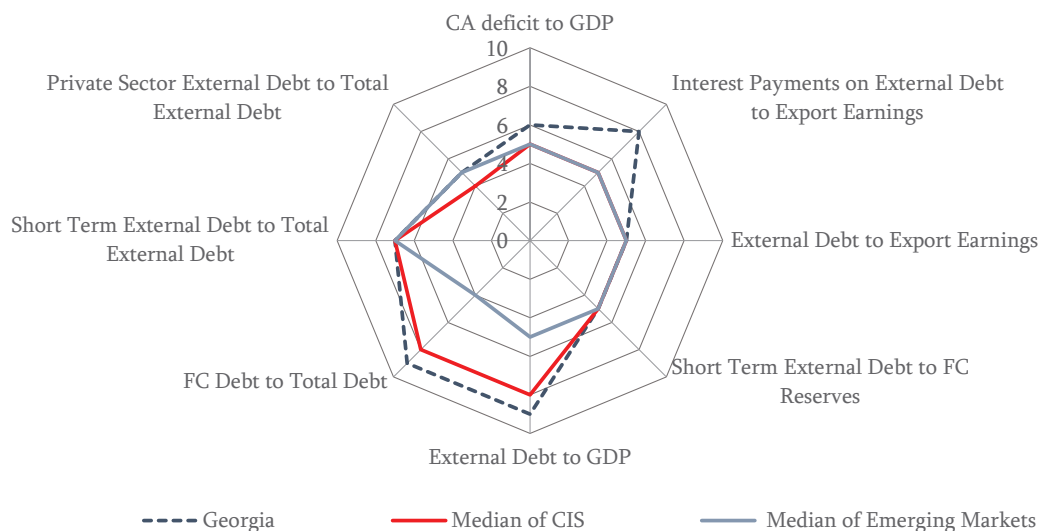
Overall, the vulnerability of the Georgian economy to the external environment is comparable to CIS countries but is higher relative to emerging markets (see Figure II.6). The CA balance has been improving for the last couple of years. However, the CA deficit remains relatively high compared to peer economies. The favourable maturity structure of external debt indicates rollover risks should financial conditions tighten. However, the currency composition of external debt in Georgia is less advantageous and constitutes an external vulnerability.

Figure II.5. FC Debt by Types of Borrowers: Cross Country Comparison (% of GDP, as of 2018Q3)



Source: NBG, Institution of International Finance, statistical data of selected countries.

Figure II.6. External vulnerability indicators relative to Emerging Markets and CIS Countries⁹



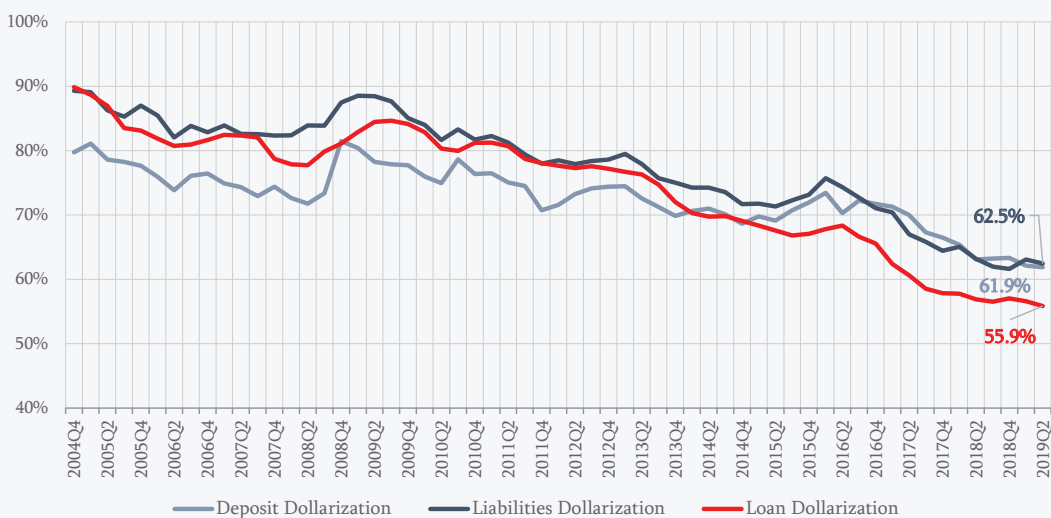
Source: NBG, IMF, WB.

¹⁰ The rankings are based on the global distributions of the corresponding indicators. Higher ranks correspond to higher vulnerabilities.

Box 2. Financial Dollarization: Risk to Financial Stability?

High foreign currency (FC) debt is driven not only by the accumulation of FC external debt issued by corporations and the government, but also by heavily dollarized domestic financial intermediation as is the case with Georgia. There is no single comprehensive measure of dollarization. However, various indicators can be used to assess the implications of financial dollarization for monetary policy and financial stability. Deposit dollarization exposes the banking system to liquidity risks and poses a challenge for the monetary policy transmission mechanism, while loan dollarization can generate significant balance sheet effects¹¹, which has implications for financial stability. Even if currency positions¹² are matched at the individual bank level, the total bank loan dollarization level is important because of the impact that exchange rate volatility can have on the quality of dollar-denominated assets of the banking system.

Figure B3. Indicators of dollarization in Georgia (Excl. Exchange Rate Effect)



Source: NBG.

In recent years, dollarization in Georgia has declined, but it still remains at a high level (see Figure B3 and Figure B4). In highly dollarized countries, macroeconomic instability and high inflation prompt residents to save in FC assets in an effort to maintain their purchasing power. Another factor contributing to high dollarization comes from the supply side: banks have access to foreign funding, but they seek to keep their currency position closed and within regulatory limits by marketing FC denominated loans. In the case of Georgia, the preference for FC deposits originates from the early 1990s. After the breakup of the Soviet Union, economic collapse, hyperinflation and a series of bank runs encouraged households to save in a “hard currency”, mostly in USD, and to keep it “under the mattress”. When that happens, allowing financial intermediation in a foreign currency does help financial deepening. However, experience shows that the “hysteresis” effect, (i.e. memory of turbulent times, macroeconomic imbalance and sizable depreciation) is long lasting, and difficult to reverse and de-dollarize once economic conditions improve.

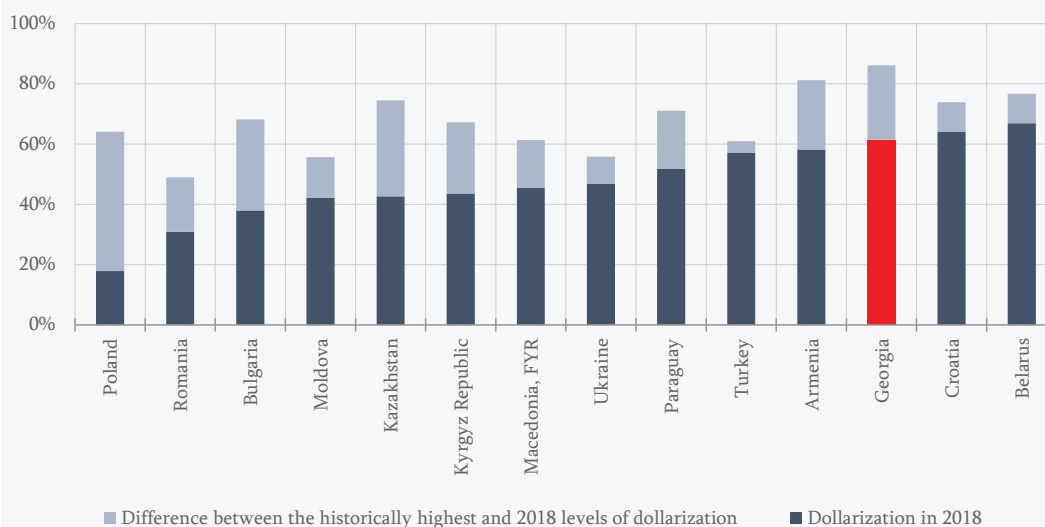
There are several reasons to worry about financial dollarization. Highly dollarized balance sheets of unhedged borrowers in different sectors are a risk to financial stability in Georgia. While at the aggregate level households’ net FC

11 The Impact of exchange rate fluctuations on equity due to currency mismatches of assets and liabilities.

12 Foreign exchange position represents the difference between the bank’s assets and liabilities formed in foreign currency.

asset positions may appear to be balanced (as both deposits and loans are dollarized), there is a currency mismatch at the micro level. As households' income and financial obligations are in different currencies, this exposes them to external shocks that induce local currency depreciation. On the other hand, the net assets position of the corporate sector in FC is negative even at the aggregate level – meaning that they are highly exposed to exchange rate risks. Excessive exchange rate risk assumed by the corporate sector could convert to credit risk for the financial sector should a sharp depreciation of the local currency lead to corporate insolvencies. Hence, regardless of whether banks' net currency positions are closed or not, they are still exposed to exchange rate volatility due to the currency induced credit risk coming from unhedged borrowers.

Figure B4. Liabilities Dollarization: Cross-country Comparison



Source: IMF.

Beyond the credit risk implied by currency mismatches in borrowers' balance sheets, the liquidity risk in highly dollarized economies poses further challenges to financial stability. Banks are exposed to a liquidity mismatch between their assets and funding. Should uncertainties over the solvency of the banking system lead deposit holders to cash their accounts, banks may have limited capacity to meet foreign currency deposit withdrawals. This happens because central banks cannot act as true lenders of last resort in the case of FC deposits since they are constrained by the size of international reserves. The very existence of this issue makes dollarized financial systems more fragile and prone to bank runs. In other words, anticipation that central banks have limited capacity to assist the financial system in the event of FC deposit withdrawals can itself become the source of a self-fulfilling liquidity crisis. Such kind of crises were seen in Argentina (2001), Mexico (1982), Bolivia (1982), Turkey (1994), Peru (1998) and Russia (1998) (Ize, et al, 2004).

In addition, dollarization can act as a potential amplifier of financial cycles. Financial dollarization weakens the shock-absorbing capacity of exchange rates as balance sheet effects in dollarized economies are channelled pro-cyclically. From the demand side, the appreciation of the local currency that accompanies the upswing in a financial cycle improves the net worth of borrowers with liabilities in FC. This improvement of borrower creditworthiness eases financial conditions and makes it easier to obtain additional funding from banks. This subsequently fuels the financial cycle upswing even further. The situation is reversed during a downturn of the financial cycle amid currency depreciation. Under these circumstances, the balance sheets of borrowers as well as

their creditworthiness deteriorate, contributing to a credit crunch and sharper downturn. Financial accelerator mechanism works on the supply side as well, as dollarized balance sheets also make banks' net worth pro-cyclical, since non-performing loans decrease during currency appreciations and increase during depreciations. When the quality of the assets in the banking system improves, banks' ability and willingness to extend new loans increase. The opposite is true in the case of depreciation. In short, feedback loops between currency movements and net worth in dollarized economies make the financial system more pro-cyclical and the exchange rate more volatile.

Household Over-indebtedness and Related Risks

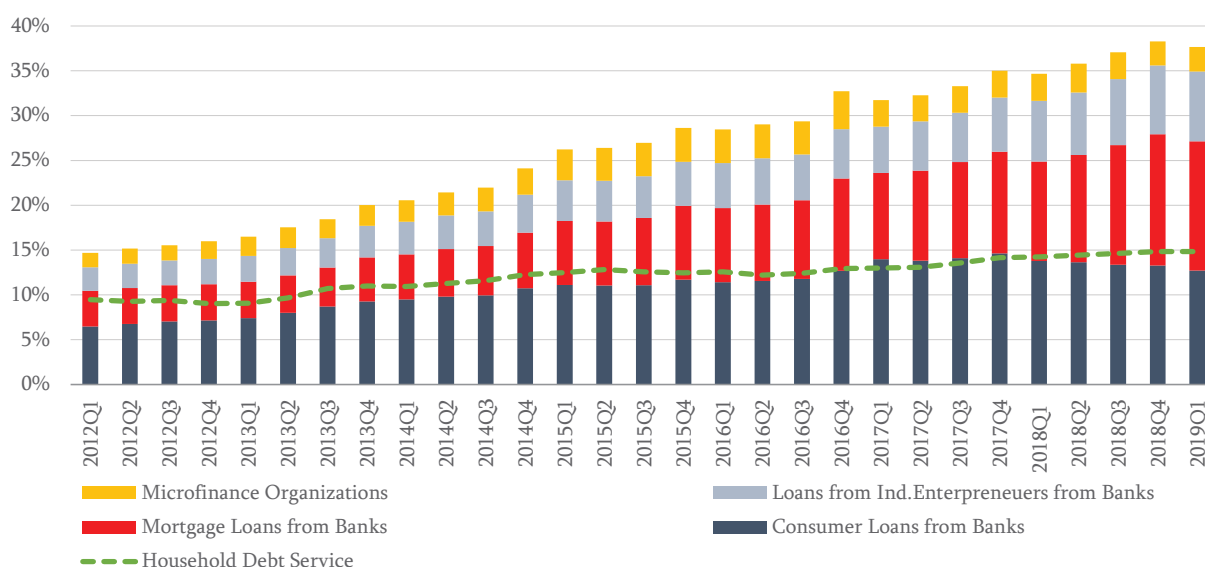
The vulnerability of the household sector to changes in economic circumstances in Georgia is particularly high. However, it has been diminishing recently due to implemented policy measures. It should be noted that the excessive growth of the household debt has been slowing down, credit standards have been improving, and dollarization has been diminishing. Despite the improvements, the vulnerability of the households is still high, which is a result of rapid growth and high level of the household debt in recent years. Moreover, much of this debt has been taken out by households that already devote large parts of their income to debt servicing. When these debts are in foreign currency, households are very sensitive to exchange rate movements. The financial health of the household sector matters not only for this sector, but also for the overall financial stability. Mortgage and personal lending represent 55 percent of total bank lending, so the financial system is directly exposed to households that default. However, there is also the potential for damage stemming from stressed households that manage to avoid default but cut-back on their spending, including for consumption. This can damage economic prospects and, by extension, harm the financial system.

Household credit risk remains low. Over the last two years, the level of credit risk has declined, as measured by the ratio of non-performing loans to total loans (NPL). As of May 2019, the NPL ratio, which measures the materialization of past credit risk, amounted to 5 percent.¹³ Low credit risk can be attributed to the buffers utilized in recent years. In the event of financial difficulties, banks were able to decrease the financial burden by lengthening loan maturity. However, the effectiveness of this buffer has diminished. In upcoming years, we expect that the recently adopted debt servicing requirements¹⁴ will help maintain low credit risk.

However, there are signs of stress in household balance sheets. Firstly, household debt has

grown very rapidly in recent years and reached a high level compared to peer countries. As of June 2019, household debt amounted to 40 percent of gross domestic product (see Figure II.7), which is above the median of similar indicators for comparable countries (see Figure II.8). In general, the household debt-to-GDP ratio is expected to increase as a country develops, but it is important that this growth is sustainable and does not create an excessive financial burden for the society. It should be noted that the high level of household indebtedness has become one of the major challenges for financial stability around the world in recent years. Increased demand as a result of the global economic recovery, and easier access to credit have contributed to the household

Figure II.7. Household Debt to GDP Ratio



Source: NBG.

13 According to NBG methodology.

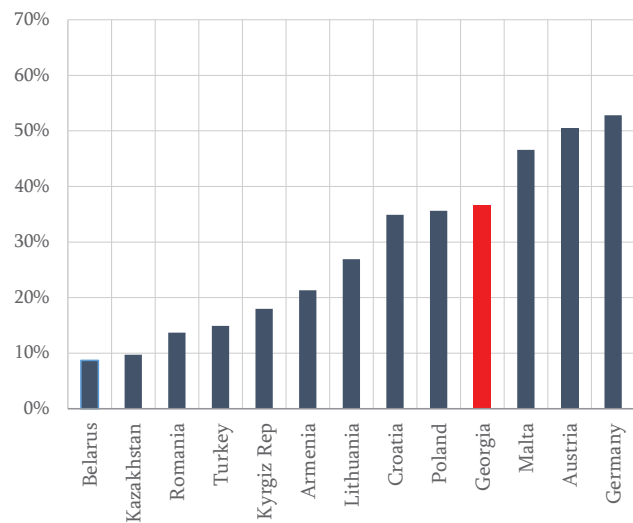
14 See Box 3.

indebtedness. Although a growth of household credit generally contributes to economic growth and the wellbeing of society, but after a certain point, those benefits decrease and excessive household indebtedness may create risks for financial stability.

Secondly, many households have high debt burden relative to their income. Before adopting Payment to Income (PTI) and Loan to Value (LTV) requirements (see Box 3), financial institutions were providing risky loans in terms of their borrowers' debt servicing capacity on potentially high returns (see Figure B 9 and Figure B 10). A rapid growth in lending was accompanied by a significant increase in the share of households that have a high credit burden relative to their income. In 2018, the share of mortgage loans issued with a PTI of above 50 percent amounted to almost 30 percent of all mortgage loans. In case of a rise in wages, a decline in interest rates and an increase in loan maturity, households might be overestimating their ability to repay loans. According to international evidence, borrowers with loans that have a 50 percent or higher PTI ratio have limited money to save and are more likely to have financial difficulties in response to unforeseen events,¹⁵ It should be noted that the existence of informal income and the lengthening of maturity might partially mitigate households' risk of default. However, the low saving rate indicates that many households do not have sufficient buffers to deal with unexpected events.

15 See R. Djoudad (2010); O. Bover (2011); S. Costa and L. Farinha (2012); Deutsche Bundesbank Financial Stability Review 2018.

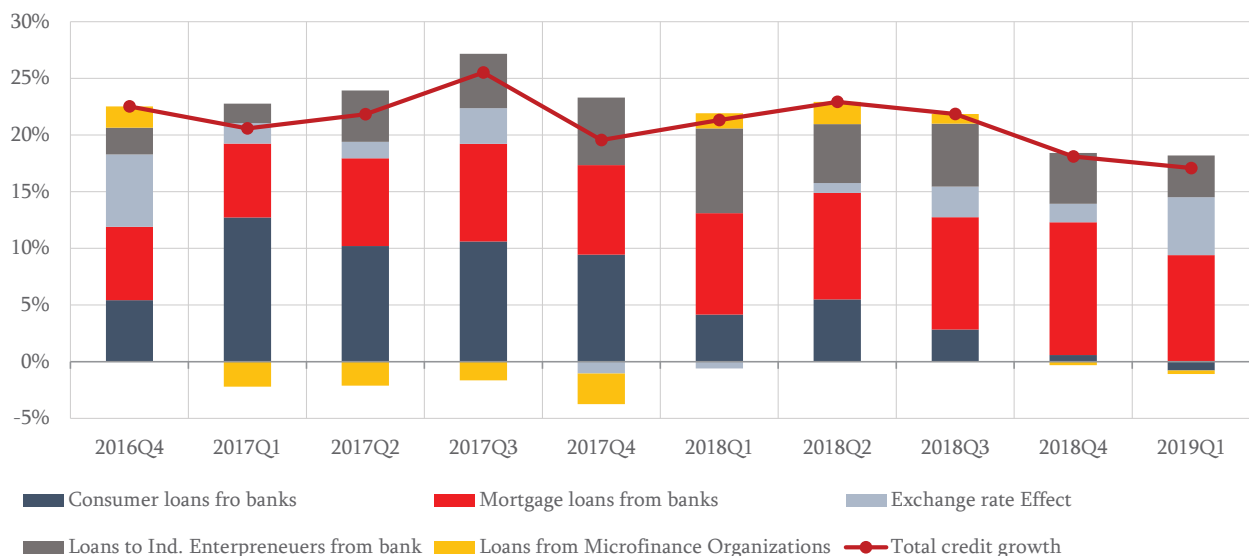
Figure II.8. Household Debt to GDP (%): Cross-country Comparison (2018 Q4)



Source: NBG, IMF.

Thirdly, a significant part of household debt is still in foreign currency, making households sensitive to exchange rate fluctuations and to any rise in foreign interest rates. Despite a significant decline during last few years, household debt dollarization remains quite high, at around 44 percent. Taking into account the fact that most foreign currency borrowers are unhedged, an exchange rate depreciation would have negative impact on borrowers' financial condition. In addition, foreign currency loans with floating interest rate have increased rapidly, which was mainly driven by loans issued in euro. In May 2019, compared to the same

Figure II.9. Decomposition of Annual Households Credit Growth

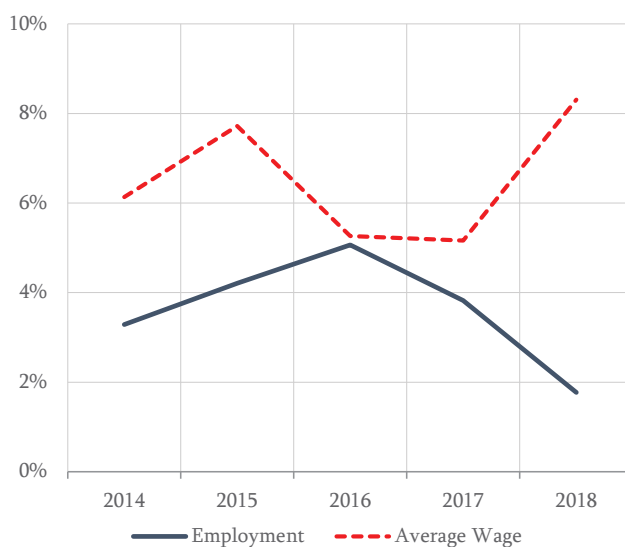


Source: NBG.

period of the previous year, the share of loans with a variable interest rate in foreign currency mortgage loans increased from 30 to 43 percent. Currently, the base interest rate on euro loans remains historically low, but that can change in the future. Therefore, households should always factor in the potential for an increase in interest rates, whenever they borrow in a foreign currency. In order to account for possible risks when borrowing in foreign currency, a stricter PTI requirement has been set for unhedged borrowers.

After the implementation of regulatory measures, the growth of household debt has declined and is now more broadly in line with the growth of income. In the second quarter of 2019, the annual growth of household debt declined to 10 percent (see Figure II.9), while the annual growth rate of nominal wages in the formal sector amounted to 8.3 percent and formal employment rose by 1.8 percent (see Figure II.10). A decomposition of the annual growth of household debt shows that mortgage loans and loans issued to individual enterprises made the largest contributions, while the stock of consumer loans has fallen. In addition, lending standards have improved significantly. The share of mortgage loans issued with a PTI of above 50 percent has decreased significantly.

Figure II.10. Labor Market Indicators, Growth (YoY)



Source: NBG.

Box 3. Introduction of Regulatory Requirements on LTV and PTI Ratios

Over the past decade, an increasing number of countries have implemented macroprudential measures to address financial stability concerns. Emerging market economies have been particularly active in this regard.¹⁶ Although the design and structure of macroprudential frameworks varies significantly across countries, in most cases the macroprudential tools at the disposal of central banks include payment-to-income and loan-to-value caps. **In January 2019, the National Bank of Georgia adopted a regulation on lending to natural persons, which incorporates the best international practice, while taking into account country characteristics.** The main objective of the regulation is to support the stability of Georgia's financial system by establishing responsible lending practices and promoting sustainable lending growth. According to the regulation, a financial institution shall not issue a loan without a proper analysis of a borrower's ability to repay the debt. In addition, the NBG introduced payment-to-income (PTI) and loan-to-value (LTV) caps. The payment-to-income ratio sets limits on maximum loan payments, which are determined proportionally to a borrower's disposable income. The loan-to-value ratio determines the maximum value of a loan relative to the market value of the real estate used as collateral for that loan. This instrument ensures the sustainability of the financial sector in the event of real estate price reductions and restricts the formation of a real estate price bubble. The PTI and LTV limits determined in the regulation are comparable to those of other countries (see Figure B5 and Figure B6). The requirements can be changed in relation to financial cycles and may vary between domestic and foreign currencies. As the limits affect the demand side, they ensure the sustainability of both borrowers and banks.

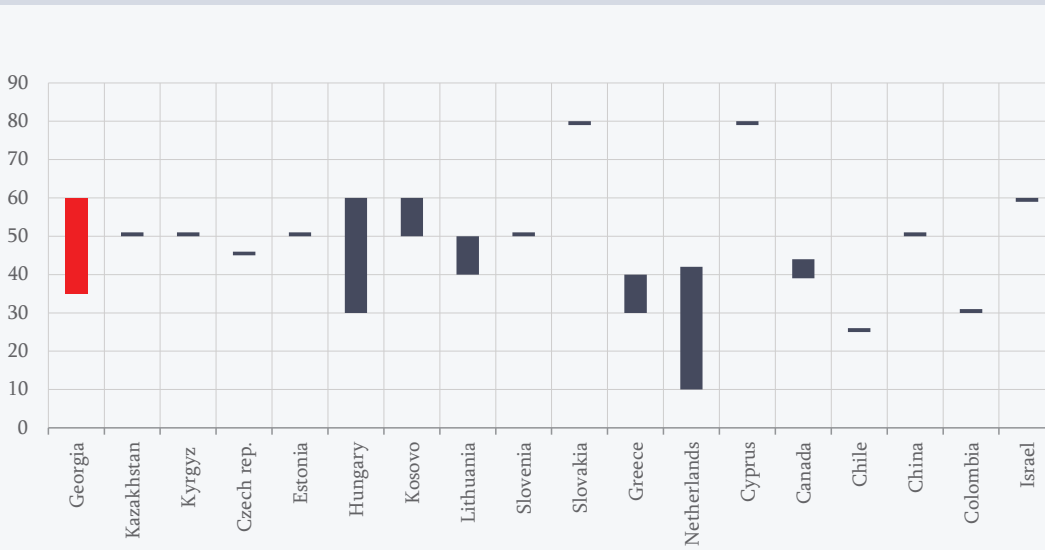
The enactment of this regulation was motivated by loose credit conditions and the rapid growth of household debt, which raised concerns from a financial stability perspective. In recent years, Georgia's financial system has been characterized by loose lending standards. These have translated into a rapid expansion of lending and growth in the share of overstretched households. As a result, according to the Credit Bureau, by the end of 2018, more than 700 000 people in Georgia were overdue on their loan payments which hindered their access to financial services and employment in the formal sector. The solvency of the household sector matters a lot to the financial system, as the system is directly exposed to households who default, and indirectly by the impact of household stress on economic growth. Prior to the implementation of the regulation, to avoid an extensive growth of retail loans over the transition period, the number of loans issued without analysis of customer's creditworthiness was limited to 25 percent of a bank's supervisory capital. In addition, the NBG's macroprudential efforts have been assisted by Government actions. To protect the more vulnerable households from predatory lending practices a cap of 50 percent on effective lending rates and a restriction on foreign currency borrowing under 200 000 GEL have been imposed.

Since the responsible lending regulations entered into force, the growth of credit has been moderated and is expected to converge to a sustainable level in the medium term. While the pace of consumer lending continues to fall, the growth of mortgage loans has picked up again, albeit with a greater share of loans issued in the domestic currency (see Figure B7). It should also be noted that anticipation of this legislation coming into force encouraged excessive growth of mortgage loans before the regulation was implemented, which along with seasonal factors, can be one of the main reasons of slowdown in lending at the beginning of the year. In light of the reduction of consumer loans, resources for lending to legal entities have increased. In June 2019, the annual growth rate of loans to legal entities amounted to 17.2 percent, which is 3.3 percentage point higher than in the corresponding period of the previous year.

¹⁶ BIS Annual Economic Report 2019, pp. 32-34.

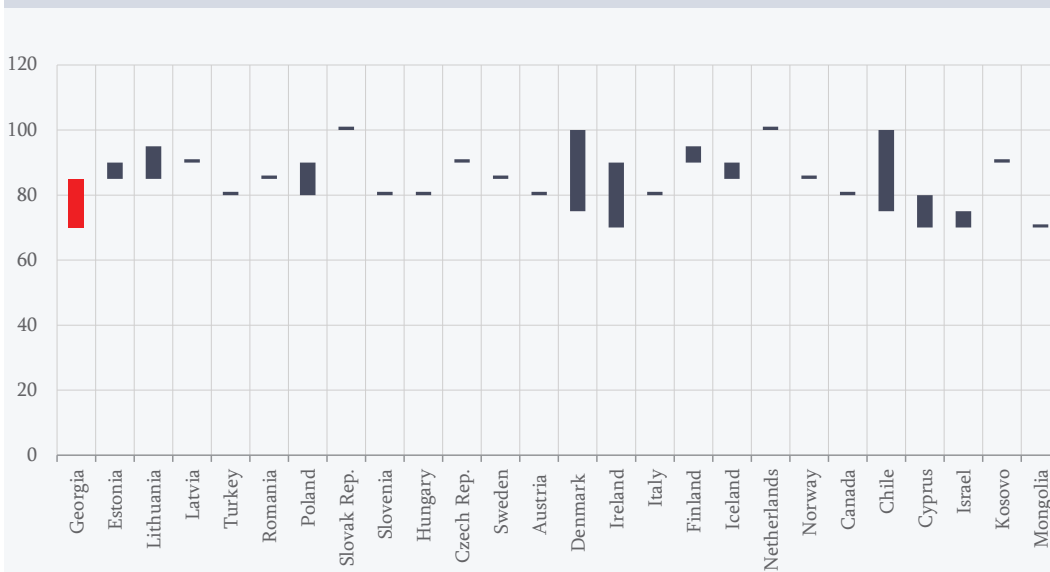
Moreover, interest rates on domestic currency loans exhibit declining trend, which is supportive of economic growth.

Figure B5. Payment to Income Requirement Range for Borrowers in Domestic Currency (%)



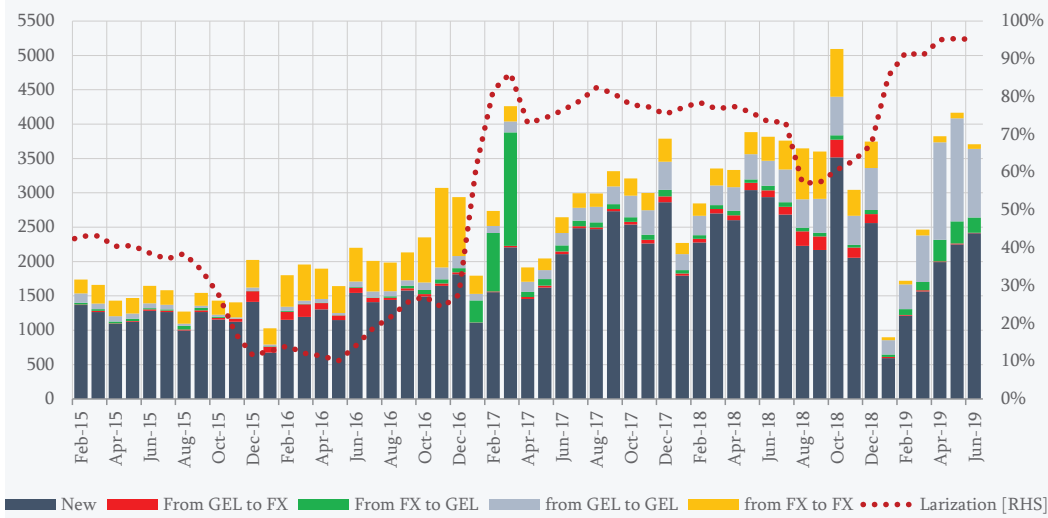
Source: IMF.

Figure B6. Loan to Value Requirement Range (%)



Source: IMF.

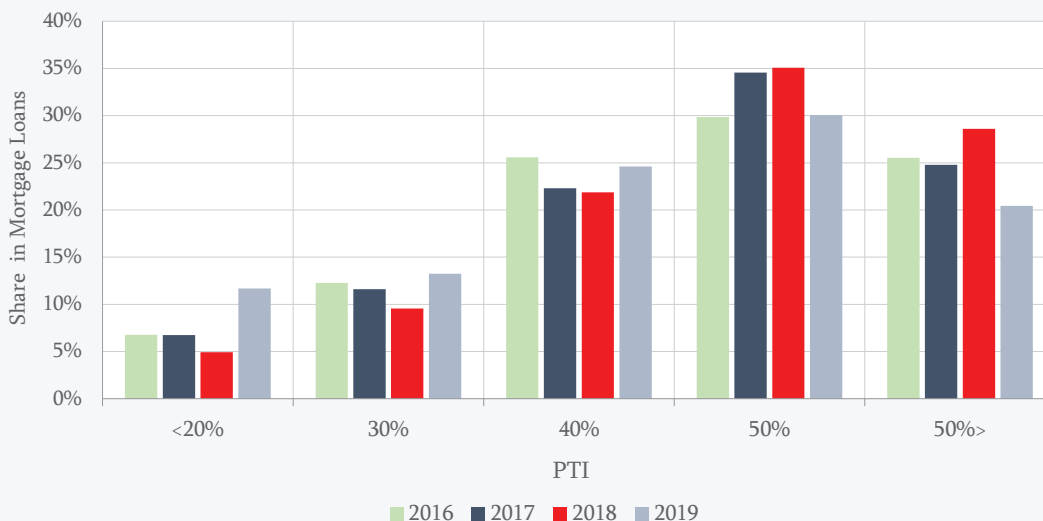
Figure B7. Mortgage lending flow, quantity



Source: NBG.

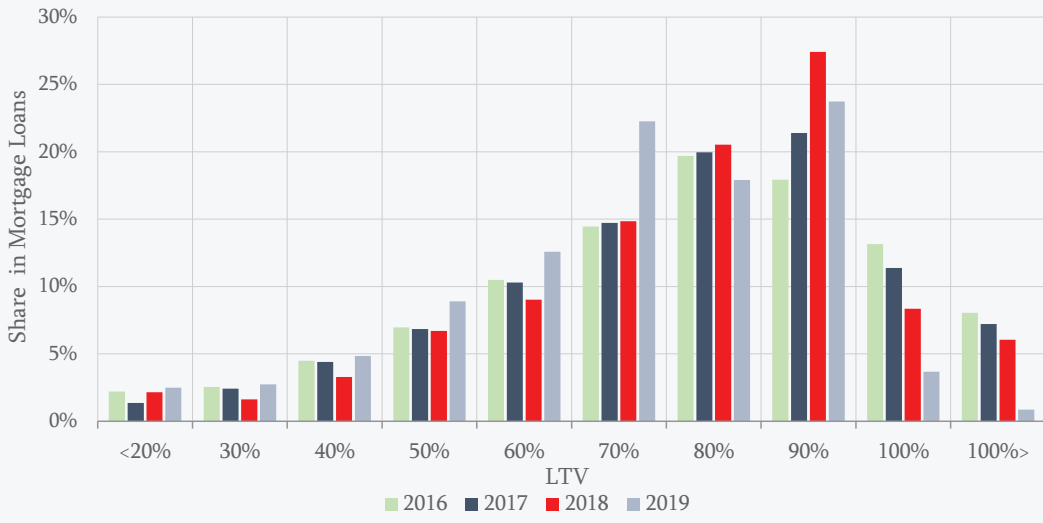
The LTV and PTI indicators for new loans have started to stabilize within the established limits, indicating an improvement (tightening) of credit standards. Loans with a high credit burden have been decreasing. The share of mortgage loans issued with a PTI of above 50 percent, which are riskier, has decreased significantly (see Figure B8). The same tendency is observed for high LTV loans (see Figure B9). Most foreign currency loans are gathered around the 70 percent LTV limit, while the majority of loans in the domestic currency are grouped around the 85 percent LTV limit. The larger share of loans close to these maximum limits reflects the importance of the regulation.

Figure B8. Distribution of PTI Ratio



Source: NBG.

Figure B9. Distribution of LTV Ratio

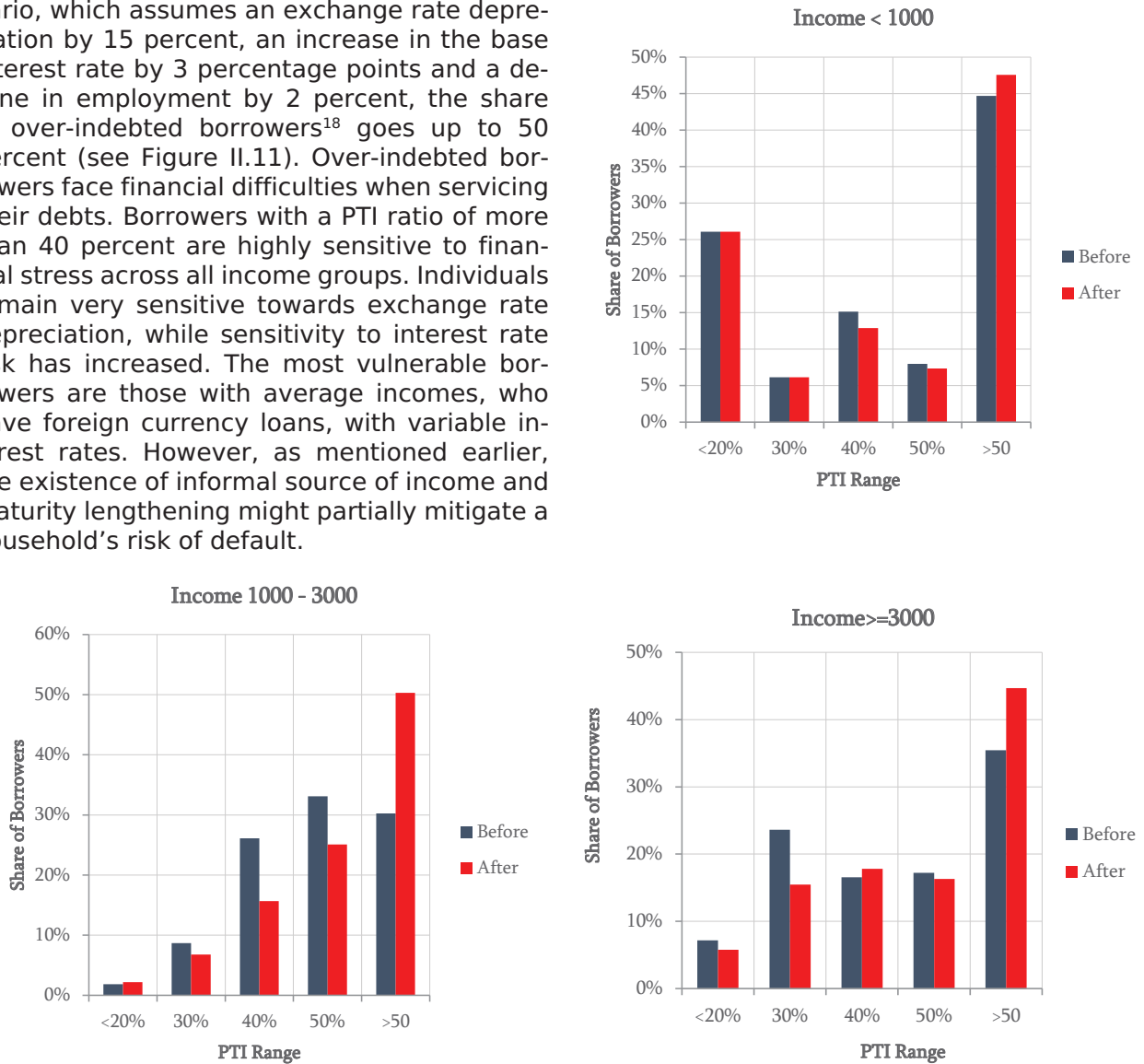


Source: NBG.

Sensitivity Analysis of the Household Sector

According to the sensitivity analysis, borrowers with a PTI ratio of more than 40 percent are the most vulnerable to adverse economic shocks.¹⁷ In the case of the moderate risk scenario, which assumes an exchange rate depreciation by 15 percent, an increase in the base interest rate by 3 percentage points and a decline in employment by 2 percent, the share of over-indebted borrowers¹⁸ goes up to 50 percent (see Figure II.11). Over-indebted borrowers face financial difficulties when servicing their debts. Borrowers with a PTI ratio of more than 40 percent are highly sensitive to financial stress across all income groups. Individuals remain very sensitive towards exchange rate depreciation, while sensitivity to interest rate risk has increased. The most vulnerable borrowers are those with average incomes, who have foreign currency loans, with variable interest rates. However, as mentioned earlier, the existence of informal source of income and maturity lengthening might partially mitigate a household's risk of default.

Figure II.11. Sensitivity of Household PTI to Macroeconomic Stress



Source: NBG.

17 Borrower sensitivity analysis is conducted using data for individual borrowers from supervisory statistics.

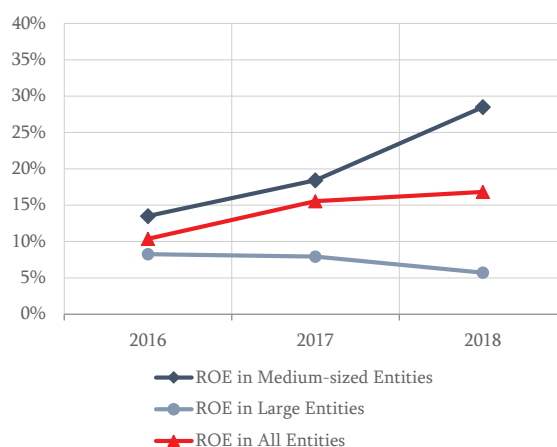
18 Individual borrower is referred to as over indebted if their net monthly income minus essential expenditure and loan instalment is negative. Mainly individuals with PTI over 50% are treated as over indebted.

Corporate Sector

The corporate sector is in a reasonably sound condition. Corporate profitability remained stable in 2018, following the increases in previous years due to competitiveness gains. Corporate debt grew at a sustainable rate. Bank credit availability to corporations has improved, while credit risk has been moderated. However, a number of concerns exist arising from interlinkages with the household sector, the composition of corporate debt and a general deterioration of the macro-financial outlook. Financially overstretched households could adversely affect corporate profitability and financial health through lower consumption expenditures. In addition, certain sectors are highly leveraged and have a sizable share of short-term corporate debt, which increases their rollover risk. The rising share of foreign financing increases the corporate sector's exposure to global financial conditions. The corporate balance sheet is also exposed to exchange rate risk as the share of foreign currency debt remains persistently high, while the availability of hedging tools is limited. Risks related to the debt servicing capacity of non-financial corporations remain at a low to moderate level. However, such corporations are highly sensitive to a deterioration of overall macro-financial conditions.

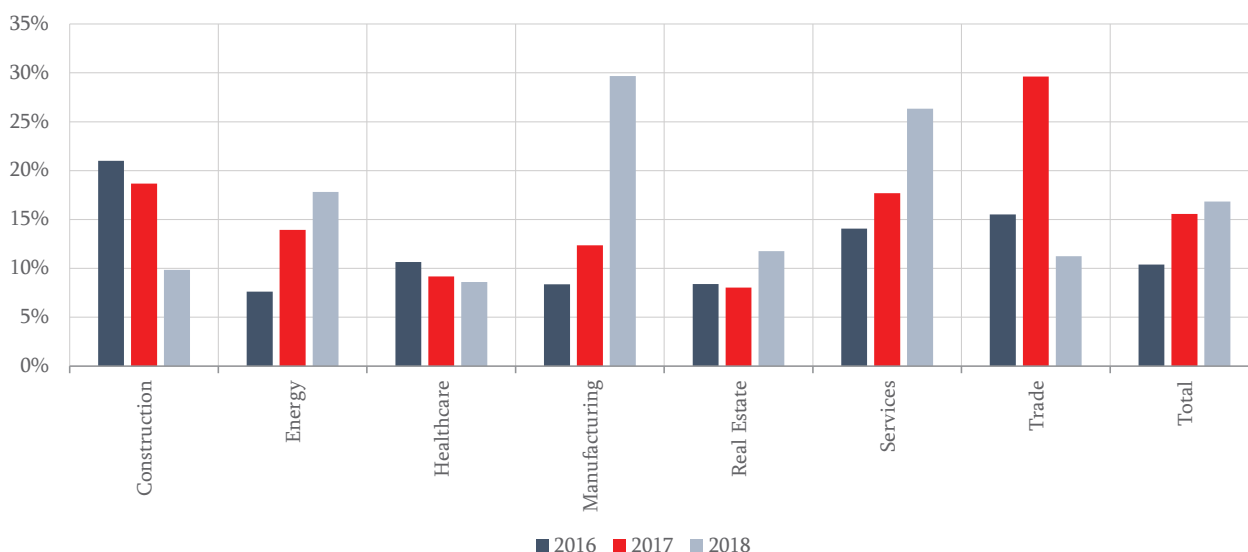
The profitability of non-financial corporations remained stable in 2018 after the considerable improvement in 2017 (see Figure II.12). In the aftermath of the 2015-2016 external shock, the improved corporate profitability observed in 2017 was mainly a medium-term consequence of the depreciation of the domestic currency and improved access to international markets. Medium-sized entities were particularly successful in exploiting this advantage. In 2018, profitability improvements have been particularly pronounced in the manufacturing, services, and real estate development sectors (see Figure II.13). However, the benefits of improved international competitiveness that accompanied the local currency depreciation were limited by the large share of imported intermediate goods and high dollarization of liabilities.

Figure II.12. Median ROE by Company Size



Source: SARAS, NBG staff estimates.

Figure II.13. Median ROE by Selected Sectors of the Economy

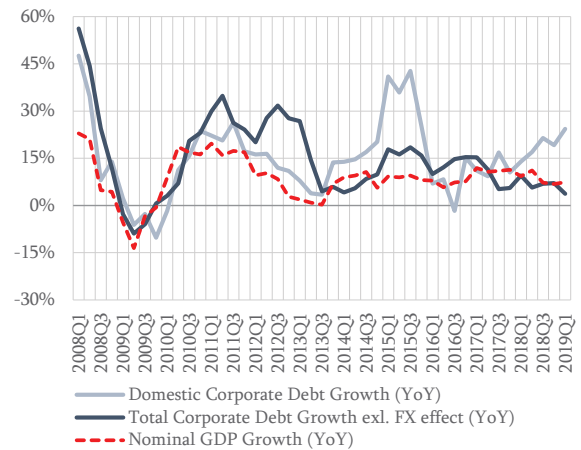


Source: SARAS, NBG staff estimates.

Corporate debt is expanding at a sustainable rate. The growth of total corporate debt has been aligned with the growth of nominal GDP in recent years (see Figure II.14). Given that corporate credit growth is supported by the expansion of the domestic economy, corporate debt appears to be on a sustainable path. However, when assessing its sustainability, it is also important to look at the corporate debt level in relation to nominal GDP. Corporate debt accumulated in the past can induce solvency issues and pose financial stability risks, even when its current growth rate is low. Recently, the corporate debt-to-GDP ratio has remained close to its long-term trend (see Figure II.15) providing further indication that credit growth in the corporate sector is sustainable.

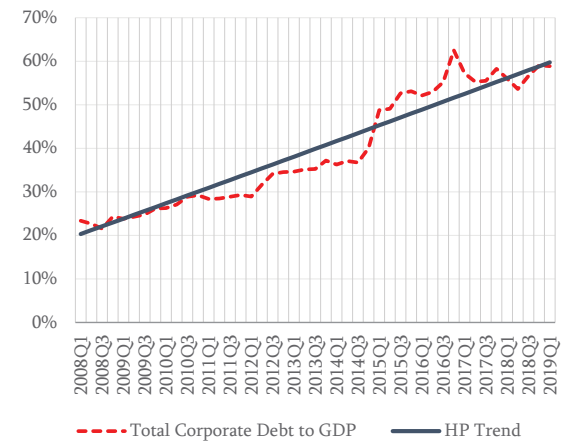
The moderation of credit risk in the corporate sector is mirrored by the fall in the ratio of non-performing loans to total corporate bank loans (NPL ratio) on banks' balance sheets (see Figure II.16). However, the NPL ratio remains relatively high in cyclical industries such as construction, real estate development, and trade. It should also be noted that NPL ratio is calculated based on past performance and therefore it may not fully capture current credit risks.

Figure II.14. Growth Rates of Nominal GDP and Total Corporate Debt



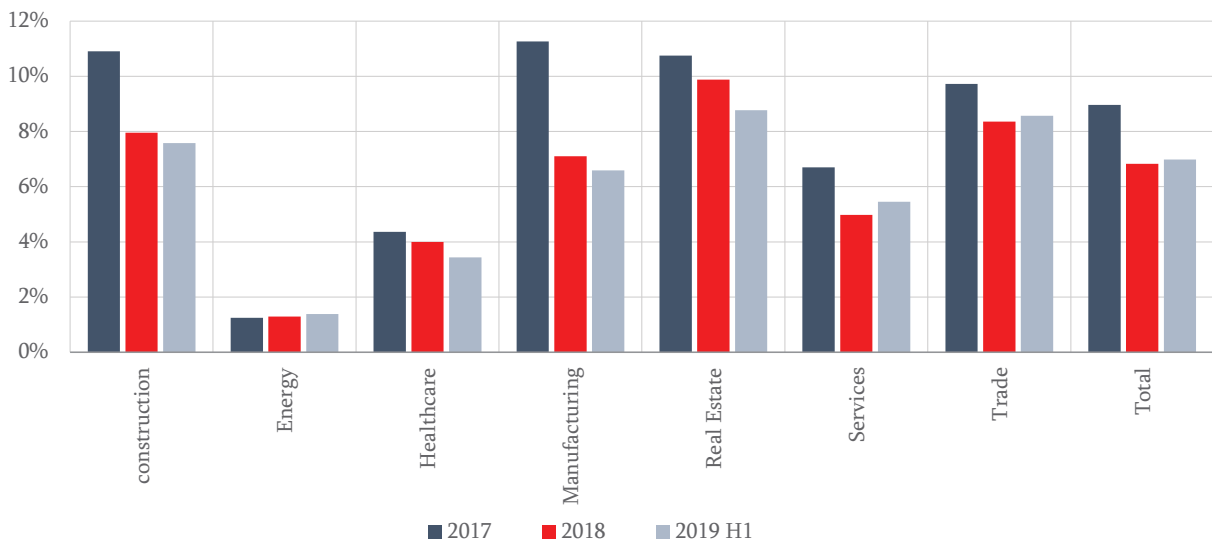
Source: GeoStat, NBG.

Figure II.15. Corporate Debt to GDP and its Long-term Trend¹⁹



Source: NBG staff estimates.

Figure II.16. Annual Average Non-performing Corporate Loans (% of Total Corporate Loans) by Selected Sectors



Source: NBG.

¹⁹ The long-term trend of Credit-to-GDP ratio is estimated using HP filter with the smoothing parameter 400 000.

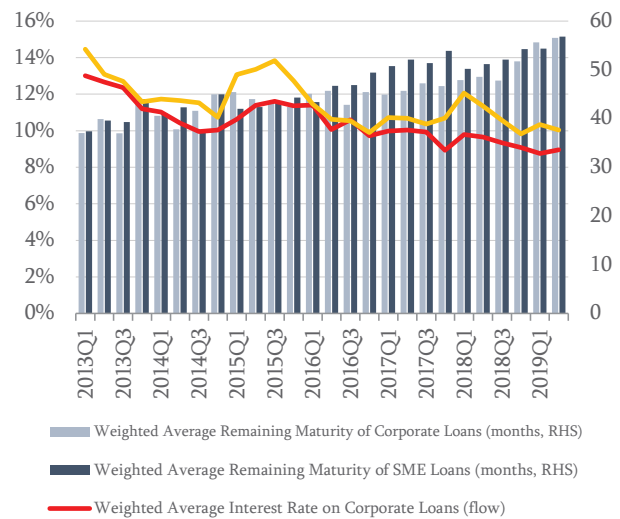
Access to corporate loans issued by banks has been improving. Average interest rates on corporate loans exhibit a downward trend, and the average remaining maturity is increasing (see Figure II.17). However, the rollover risk on corporate debt remains significant as a consequence of the sizable share of floating-rate corporate loans and short-term maturities.

Demand for corporate loans is expected to be driven by persistently high investment activity. Sound investment activity is crucial for companies if they are to remain competitive and support long-term sustainable growth. Investment as a share of value added in companies has been quite high at around 30 percent, in recent years (see Figure II.18). This tendency reflects the orientation towards growth among companies and requires that the availability of internal and external sources of funding be sustained. However, as corporate debt accumulates, investment may be discouraged: a situation commonly referred to as debt overhang.²⁰

Despite the sound performance and little sign of corporate credit risk on the financial sector's balance sheets, several issues require close attention. **Firstly, adverse external developments pose risks to corporate profitability.** Due to the increased downside risks in the region as discussed in the macro-financial environment and outlook section of this report, corporate profitability risks are picking up in the coming years.

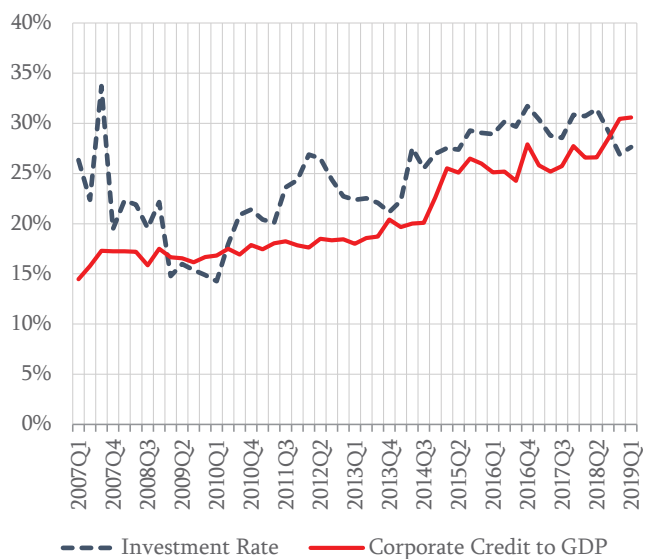
Secondly, corporations are exposed to risks transmitted from households, as the two are interlinked. Due to the high level of household indebtedness and the substantial number of financially overstretched individuals, even slight level of stress can adversely affect discretionary household consumption expenditure, which can have a sizable impact on corporate sales and profitability. In the event of reduced profitability in corporations, subsequent cost optimization efforts can lead to lower labour incomes for households, thus amplifying the initial impact of the shock.

Figure II.17. Weighted average Interest Rates and Remaining Maturity of Corporate Debt



Source: NBG.

Figure II.18. Gross Investment and Credit to GDP in Non-financial Corporations



Source: NBG, GeoStat.

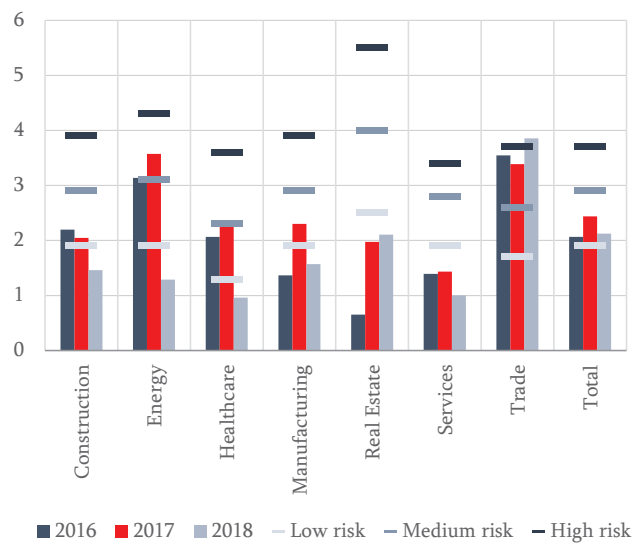
²⁰ The impact of debt overhang on corporate investment based on recent evidence from EU is discussed by Kalemli-Özcan, S, L Laeven, and D Moreno (2018), "Debt Overhang, Rollover Risk, and Corporate Investment: Evidence from the European Crisis", CEPR Discussion Paper 12881.

Thirdly, although the overall corporate debt burden remains at a safe level, there is notable variability across industries. Corporate leverage, measured as the corporate debt-to-EBITDA ratio can be used to assess the debt burden in companies. Although the aggregate corporate debt-to-EBITDA ratio remains within reasonable boundaries²¹, a few industries, such as trade, seem excessively leveraged (see Figure II.19). Overly high leverage, coupled with the short-term maturity structure of the debts, creates rollover risk, which can discourage investment and compromise long-term growth prospects.

The sizeable share of short-term corporate debt poses rollover risk and increases the likelihood of debt overhang should financial conditions tighten. Even though the accumulation of corporate debt under easy lending conditions might not necessarily lead to the realization of credit risk, firms with a sizeable amount of short-term debt on their liabilities side may face rollover risk when the cycle turns. During the downturn of the financial cycle, when collateral values drop, banks are reluctant to renew expiring credit lines. Corporate borrowers are thus compelled to cut investment abruptly and compromise their long-term growth. This will negatively affect their profitability and debt-servicing capacity. The impact is stronger when corporate borrowers are linked to banks that are more vulnerable. In Georgia, while the increase in corporate leverage has been moderate, the share of short-term corporate debt remains sizeable, especially in large companies (see Figure II.20). This generates refinancing risks and can have a significant negative impact on the economy in the event of a systemic liquidity shock.

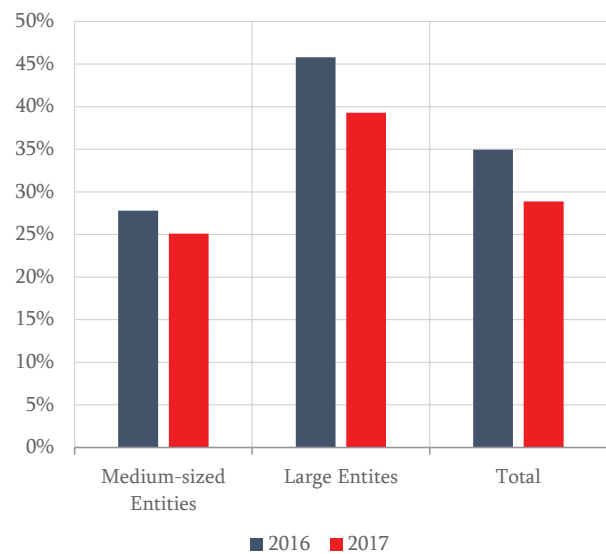
The reliance on foreign corporate funding sources increases the corporate sector's sensitivity to international financial markets. Reliance on foreign financing has increased significantly among corporate borrowers (see Figure II.21). Even though foreign financing provides benefits in terms of diversified corporate funding sources, it comes at the cost of higher exposure to global financial conditions. Although a proportion of the foreign financing reflects intercompany loans at favourable terms, the availability and cost of foreign funding are generally more responsive to changes in market sentiment. Meanwhile, bank financing remains a significant source of corporate funding. As for

Figure II.19. Median Debt to EBITDA by Selected Sectors and Risk Thresholds



Source: SARAS, NBG staff estimates.

Figure II.20. Median Share of Short-term debt in Total Debt by Company Size



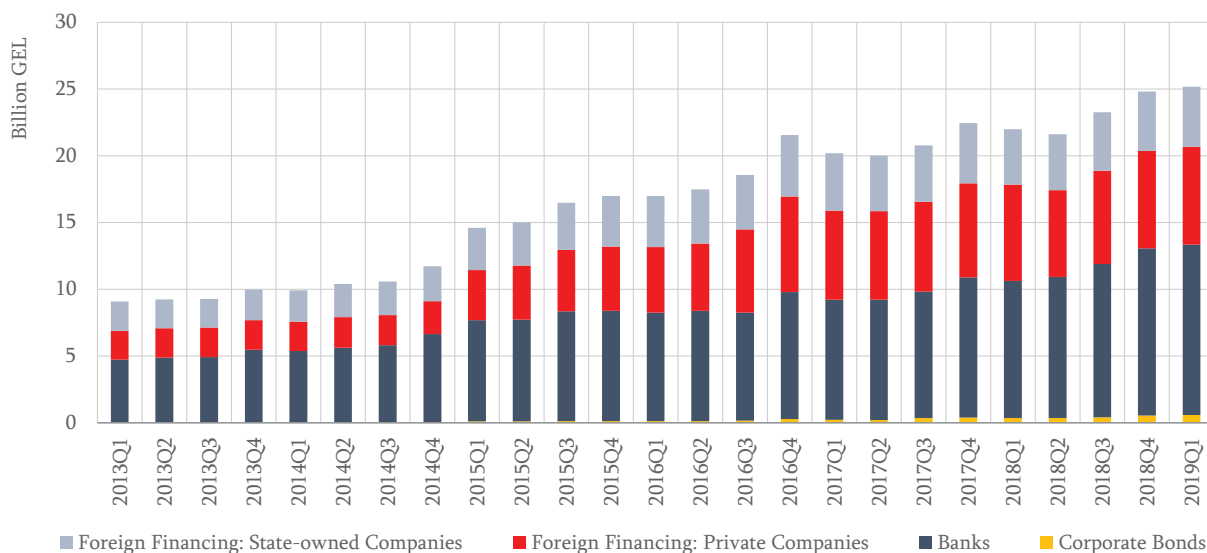
Source: SARAS, NBG staff estimates.

²¹ The three threshold levels of debt-to-EBITDA have been identified corresponding to four regions of risk: lowest, low, moderate and high. The thresholds were applied to the selected industries as well as the overall corporate sector based on Moody's methodology and staff judgement.

domestic market-based finance, the corporate bond market is still in an early stage of development and the share of domestically issued debt securities in corporate liabilities is rather small. Nevertheless, the domestic bond market has been expanding and is expected to become

countries with a similar level of exchange rate risk exposure against major global currencies. The share of exports to non-regional destinations such as the US, the EU, and China, which can effectively serve as a hedge, is only 6.5 percent of GDP (see Figure II.23).

Figure II.21. Debt of Non-financial Corporations

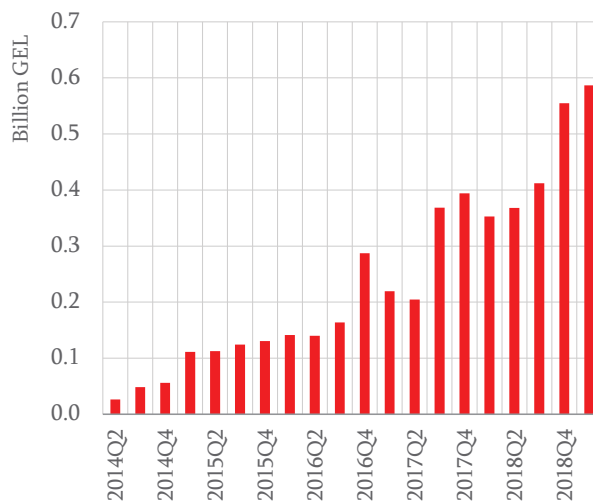


Source: NBG.

a more important source of corporate funding (see Figure II.22). It should be noted that as outstanding corporate bonds are not amortized on a regular basis, they entail higher credit risk compared to bank loans.

Lastly, the corporate balance sheet is exposed to exchange rate risk as the share of foreign currency debt remains persistently high, while hedging capacity is limited. The share of foreign currency credit remains above 65 percent (see Figure II.23). Thus, exchange rate fluctuations can adversely affect the corporate debt burden unless there are hedging tools in place. Non-financial corporations have limited access to financial hedging instruments due to underdeveloped domestic financial derivatives markets.²² Therefore, hedging is only viable through operational activities such as exports. When the effective currency denomination of export revenues matches the currency denomination of corporate debt, exchange rate movements have limited impact on the debt burden. Although total exports have been increasing recently, the hedging capacity of the accompanying inflows is still limited since the exports are predominantly directed to regional

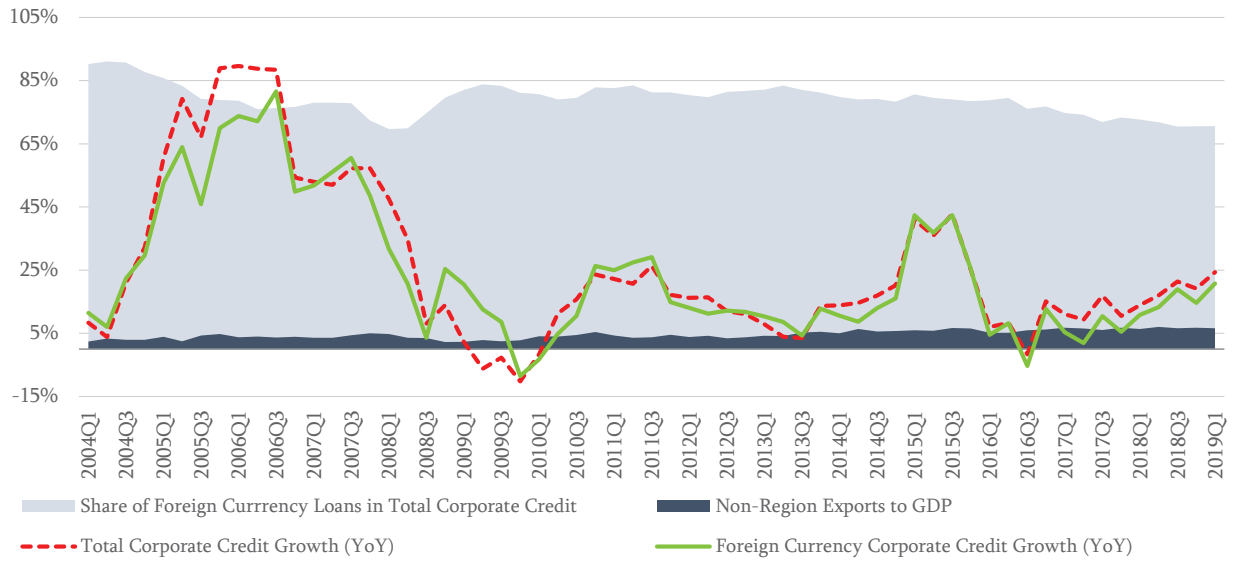
Figure II.22. Median Share of Short-term debt in Total Debt by Company Size



Source: NBG.

22 This year, the draft law “on financial collateral arrangement, close-out netting and derivatives” was submitted to the parliament for discussion, which should support deepening of the derivatives markets by providing a proper regulatory framework.

Figure II.23. Foreign Currency Corporate Credit Growth and Currency Hedging of Exports



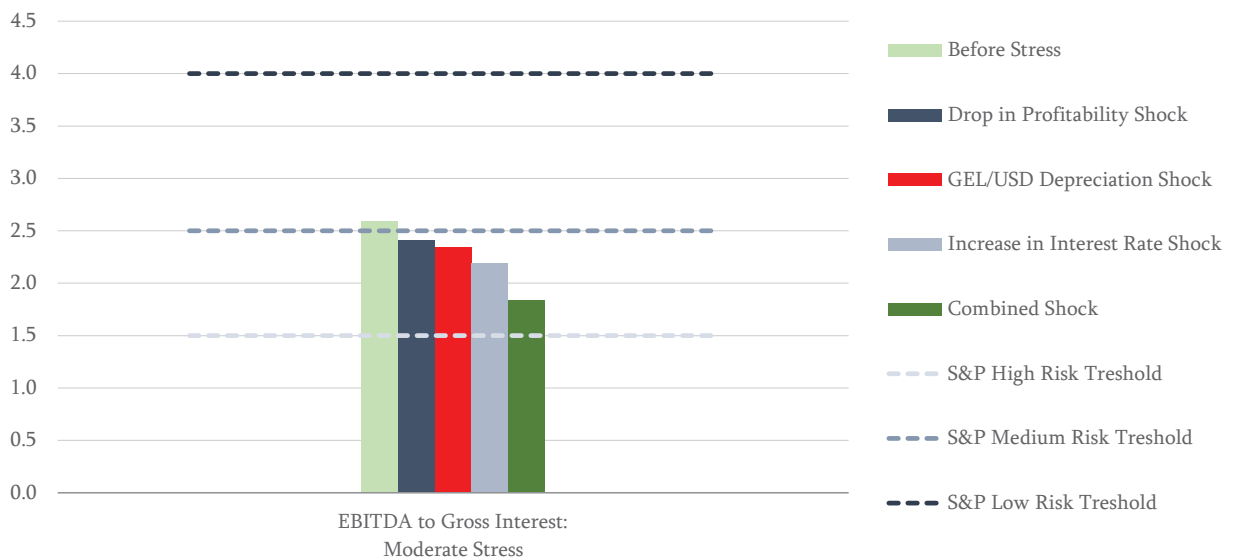
Source: NBG, GeoStat.

Sensitivity Analysis of the Corporate Sector

Non-financial corporations are vulnerable to the deterioration of macro-financial conditions. The impact of relevant macro-financial shocks on corporate debt-servicing capacity was examined using a simple sensitivity analysis. The size of the shocks (see Table 1) were calibrated to be consistent with the moderate risk scenario as discussed in the external vulnerabilities section of this report.

Figure II.24 shows the median interest coverage ratio²³ (ICR) for non-financial corporations before stress, the stressed ratios under each selected shock, as well as the combined impact of the three shocks. The median interest coverage ratio, as of 2018, was 2.6, which is slightly above the medium-risk threshold according to

Figure II.24. Sensitivity Analysis: Impact of Selected Shocks on Median Interest Coverage Ratio



Source: NBG staff estimates.

²³ Interest coverage ratio is calculated as the ratio of EBITDA to gross interest expense.

Standard & Poor’s Corporate Methodology.²⁴ Interest rate shock was found to have the highest impact among the selected individual shocks. Even though non-financial corporations are poorly hedged against exchange rate risk, interest rate shock seems to be a more significant risk factor when it comes to debt-servicing capacity. In terms of the combined shock, the corporate interest coverage ratio remains on the safe side of the high-risk threshold.

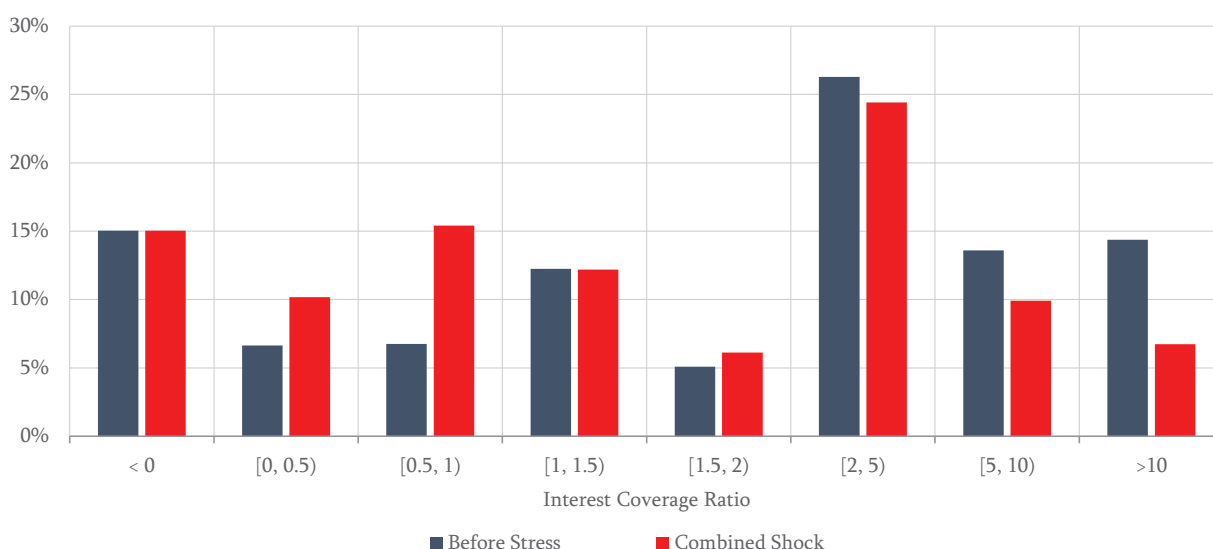
It is also important to consider the distributional effects on corporate interest coverage ratios caused by the selected shocks under the moderate risk scenario. As companies migrate from higher to lower interest coverage ratio ranges as a result of the selected combined shock being realized, their debt servicing ability deteriorates. If their coverage ratio falls below 1, companies can no longer service their debt using the cash inflows generated from their operating activities – a situation commonly known as debt at risk. When companies enter this zone, their credit risk jumps. This can induce systemic issues since commercial banks have sizable exposure to non-financial corporations’ liabilities. Under the moderate risk scenario, the combined shock causes the highest increase in the debt at risk category: the asset-weighted share of companies with an ICR of below 1 increases from 28 percent (as of 2018) to 40 percent under the combined shock (see Figure II.25).

Table 1. Macrofinancial Shocks for the Sensitivity Analysis of Non-financial Corporations

	Increase in Market Interest Rate Shock	GEL/USD Exchange Rate Depreciation Shock	Drop in Profitability Shock
Moderate Stress	3%	15%	7%

To conclude, corporate credit risk is expected to stabilize in the baseline as overall profitability is sound and the overall leverage ratio indicates low risks. However, the sensitivity analysis shows that around 40 percent of non-financial corporations may face debt servicing difficulties under a realization of the moderate risk scenario. Given the increased downside external risks and higher exposure to external inflows, as discussed in the macro-financial environment and outlook section of this report, the realization of credit risk can result in severe stress with grave repercussions for the financial system and the overall economy. In order to alleviate the adverse consequences of the stress, companies should engage more actively in risk management by diversifying their markets and hedging against exchange rate and interest rate risks.

Figure II.25. Asset Weighted Distribution of Corporate Interest Coverage Ratio



Source: NBG staff calculations.

24 Standard & Poor’s. (2013). RatingsDirect®: Corporate Methodology.

Real Estate

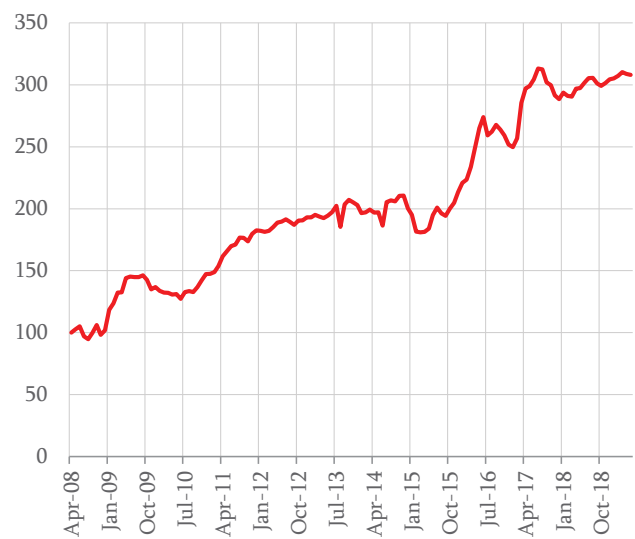
Property markets always warrant careful attention from a financial stability perspective. In Georgia, property pricing is opaque and it is difficult to accurately assess real estate conditions. Nevertheless, the available evidence suggests that demand for housing has been growing strongly on the back of much improved affordability. However, according to the information available to the NBG, there is no evidence of a price bubble forming in the housing market in Georgia. This is mainly because the increase in demand has been matched by a pick-up in construction. Indeed, the main risk in the property market appears to be one of potential over-supply should households find reason to cut-back on their purchase of real estate. This means that commercial banks need to closely monitor their exposure to property developers.

The property market needs to be closely monitored from a financial stability perspective. In general, the real estate sector is connected to financial stability through two main channels, mortgages and loans to construction companies. As the global financial crisis of 2007-2008 showed, negative developments in the real estate sector can have a significant impact on the asset quality of banks and impose risks to financial stability.

In 2018, demand for residential real estate remained strong, driven by much improved affordability. A strong growth of wages, lower interest rates and the availability of longer-term mortgage loans, all contributed to higher affordability and helped fuel an increase in the demand for real estate (see Figure II.26). In 2018, the number of residential real estate transactions rose by 22 percent compared to the previous year (see Figure II.27). In the two largest cities of Georgia, Tbilisi and Batumi, the number of real estate transactions rose by 33 and 15 percent, respectively.

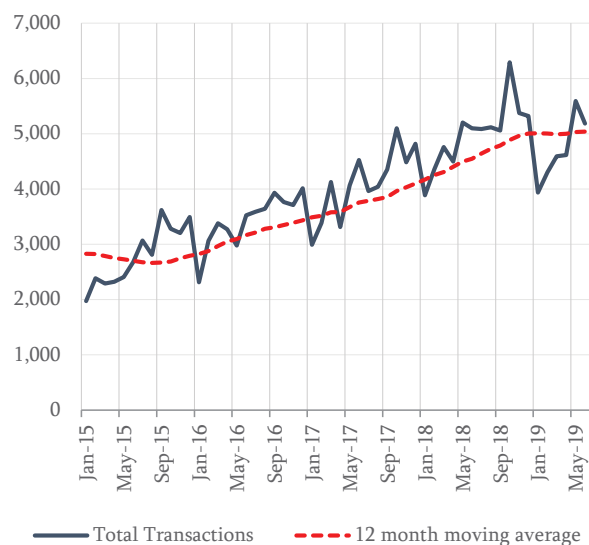
Part of the demand for residential real estate stems from investment purposes, particularly in Batumi. Batumi is located on the coast of the Black Sea and much of its economy revolves around tourism, especially from neighbouring countries. Lower rates on foreign currency deposits, easier lending conditions and rapid growth in the tourism sector have made property an attractive investment option. However, while the property market has been stable in recent years it is important that investors are aware that buy-to-let properties are highly vulnerable to economic fluctuations. In particular, economic turbulence in neighbouring countries that prompted a decline in tourism numbers could quickly translate into abrupt halt of construction projects. In addition, non-residents, who account for almost one-third of all mortgages, are likely to have a higher probability

Figure II.26. House Affordability Index (2008 = 100)²⁵



Source: NBG.

Figure II.27. Number of Housing Transactions



Source: NBG.

²⁵ House Affordability Index is based on the wage-to-payment ratio, which takes into account property prices, maturity of mortgage loans, interest rates and average wage.

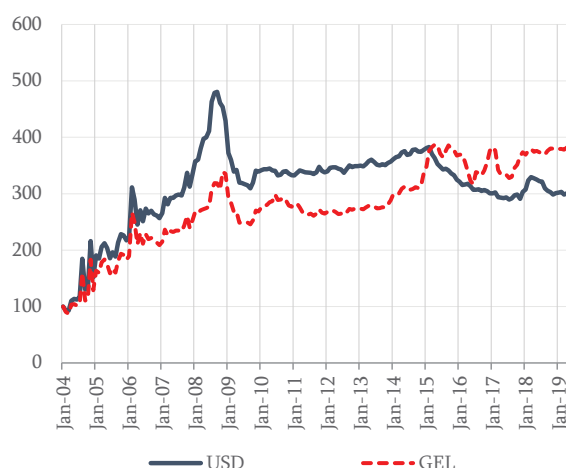
of default compared to residents. In order to mitigate these risks, the NBG set the LTV requirement for non-residents at 60 percent.

Even though property pricing in Georgia is opaque, the available data shows there are no evidence of a price bubble forming in the housing market. According to different estimates²⁶, the average price of residential real estate has been steadily recovering after the global financial crisis (see Figure II.28), while the capitalization rate (the rent-to-price ratio) has improved (see Figure II.29). Currently, the risks of real estate price bubble remain low, as the rent-to-price ratio is close to its long-term average value.

The supply of residential real estate has risen significantly over the last couple of years, increasing the risk of oversupply. Since 2012, the number of construction permits issued has increased substantially. However, in 2018, as a result of amendments to construction regulations, the number of permits issued fell by 45 percent year on year (see Figure II.30). It should be noted that, given the longevity of real estate, new construction should depend primarily on demographics and other stable, demand-side factors (e.g. income growth). However, to some extent, it is also determined by the cyclicity of house prices. In particular, loose credit conditions for mortgage loans can fuel demand for residential real estate, placing upward pressure on prices. This provides an incentive for developers to construct apartments, thereby increasing the risk of oversupply. It should also be noted that new construction requirements are expected to further slow permit issuance, which will help the market adjust to possible oversupply. Moreover, responsible lending regulations are expected to support the sustainability of the market.

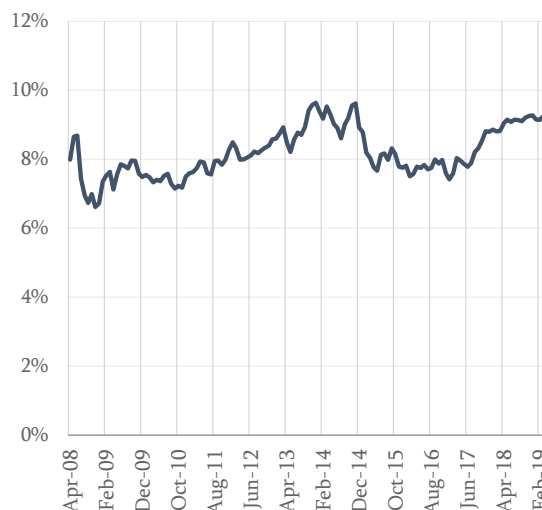
Banks should carefully monitor lending to construction companies. The construction and real estate sectors are expanding rapidly in Georgia, attracting more labour and investment. However, as the contribution of construction sector to the economic growth increases, the economy becomes more prone to pro-cyclicality. In 2018, the share of the construction sector in GDP was 12.2 percent, while its contribution to real GDP growth amounted to 20 percent (see Figure II.31). If the business cycle were to turn or demand decline, the ability of construction and real estate companies to service their loans would deteriorate. This would have adverse consequences for the asset quality of the banking sector. Commercial banks thus need to closely monitor their exposure to property developers.

Figure II.28. House Price Index



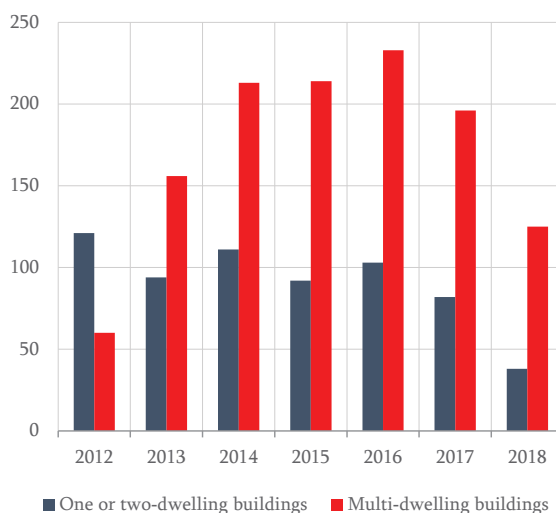
Source: NBG.

Figure II.29. Capitalization Index (Rent to Price Ratio)



Source: NBG.

Figure II.30. Number of Issued Permits

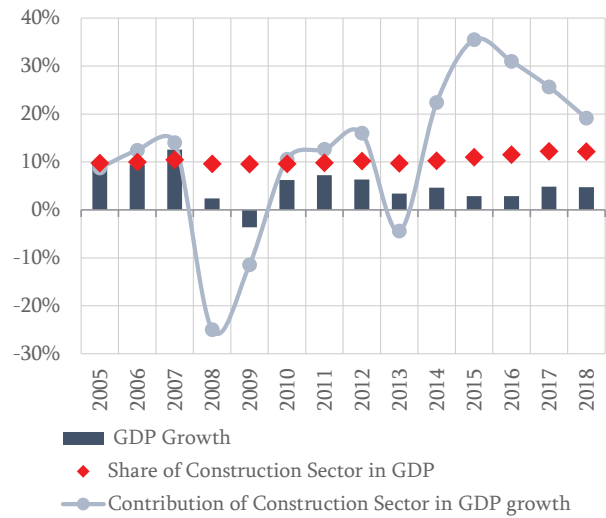


Source: NBG.

26 NBG, Colliers.

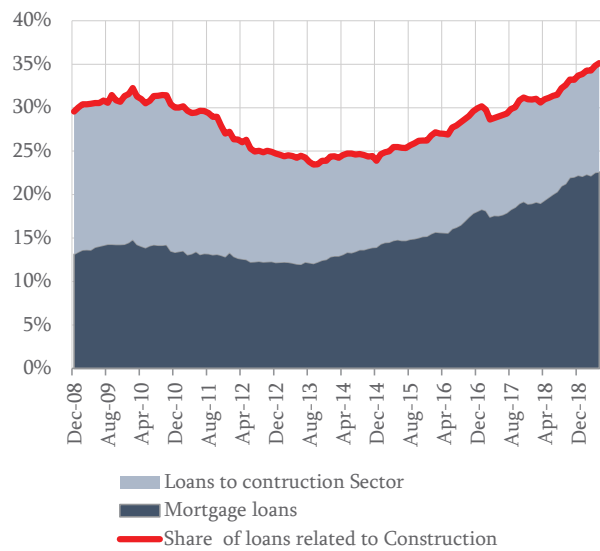
Banks' exposure to the construction and real estate sector has risen sharply and now exceeds pre-crisis level (2008). However, the decomposition of the loan portfolio provides some comfort, indicating that banks are providing fewer high-risk loans. In 2018, compared to the previous year, the share of mortgage loans in the total credit portfolio increased by 3 percentage points, while the share of loans to the construction sector decreased by 1 percentage point (see Figure II.32). It is important to indicate that mortgages, which are more granular, have lower default probabilities than loans made to developers and construction companies. However, the high share of mortgages denominated in foreign currency is a concern for the financial stability due to the currency mismatch on households' balance sheets. In order to lower the vulnerability of households towards exchange rate movement and promote larization (de-dollarization), the government has restricted issuance of loans below 200 000 GEL in foreign currency.

Figure II.31. Contribution of Construction Sector to the Economy



Source: NBG.

Figure II.32. Loans Related to Real Estate



Source: NBG.

III. Financial Sector

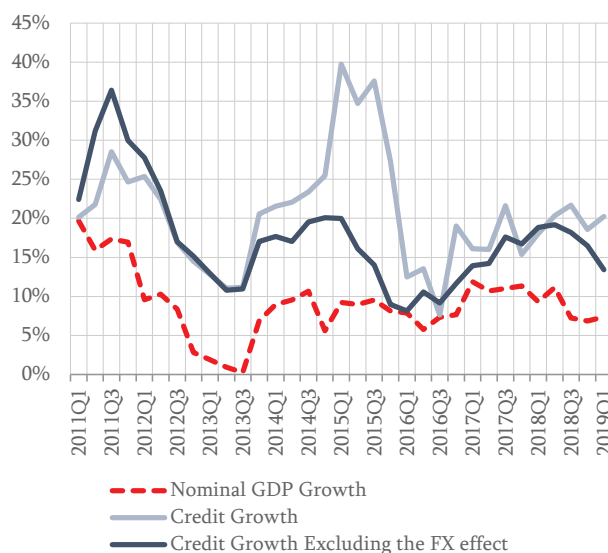
Financial Sector review

The Georgian financial system is sound and stable. The banking sector remains profitable, well capitalized and liquid and the share of non-performing loans in total lending is declining. However, dollarization remains a significant challenge to the financial sector and the increase in credit risk associated with rising household indebtedness also warrants close attention. Recently adopted macroprudential measures are expected to lower the loan growth to the sustainable level.

Since the enactment of the regulation on issuance of loans to natural persons in January 2019, credit growth has slowed to a more sustainable rate. In the second quarter of 2019, compared to the beginning of the year, the annual growth of credit has decreased by 6 percentage points, settling at 12 percent (excluding the FX effect) (see Figure III.1). In order to monitor credit cycles, the NBG evaluates the credit²⁷-to-GDP gap.²⁸ The credit-to-GDP ratio is an indicator that shows the extent to which lending is growing faster than GDP by historical standards. In earlier years, the credit-to-GDP ratio was above its long-term trend mainly due to high growth of lending to households and to the exchange rate effect (see Figure III.2). According to the NBG’s projections, total lending growth is expected to grow by 10-15 percent so that the credit-to-GDP gap should gradually close in the medium term.

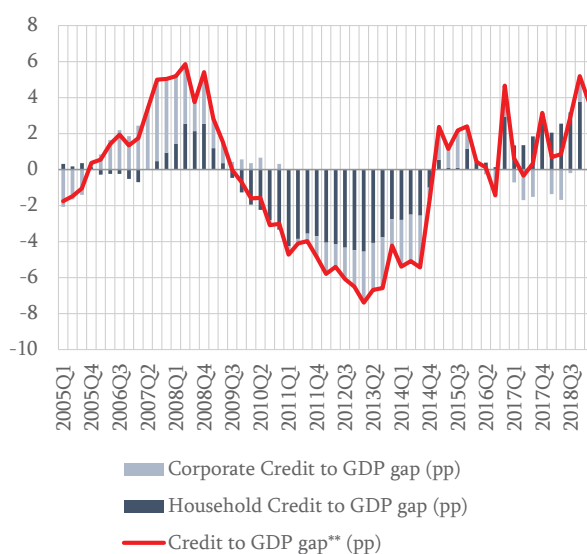
A decomposition of annual changes in the credit-to-GDP ratio reveals that, in addition to the high demand for credit, exchange rate effects have also been an important factor behind the increase in the credit-to-GDP gap. The local currency depreciation significantly increased the debt burden throughout 2015-2016 and has continued to play an important role since then, contributing to rising indebtedness (see Figure III.3).

Figure III.1. Annual Growth of Nominal GDP and Credit



Source: NBG.

Figure III.2. Credit-to-GDP Gap (%)



Source: NBG.

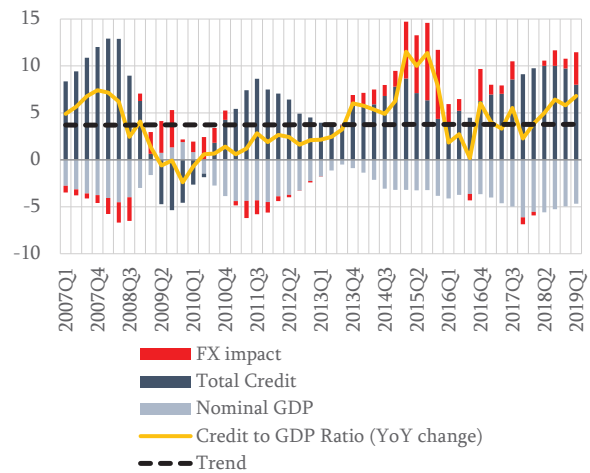
27 Credit includes loans directly issued by commercial banks and microfinance institutions as well as bonds issued domestically by the non-financial sector.

28 The credit-to-GDP trend is estimated using HP filter in line with the Basel recommendations ($\lambda=400$ 000).

The high growth of lending has been mainly caused by loose credit conditions and strong demand from households. This demand has been accommodated by an increase in the risk appetite of financial institutions, which are attracted to the provision of consumer lending with potentially high returns. The growth in mortgages remains quite strong, which can equally be attributed to strong demand and loose lending conditions. In 2018, the share of mortgage loans issued with a PTI above 50 percent amounted to almost 30 percent of total mortgage loans. Lending conditions are an important component in defining the general risk environment, as possible loan losses pose a greater danger to the banking sector when lending conditions are loosened. The positive credit-to-GDP gap and the loosening of lending conditions indicates a rise in the risk level.

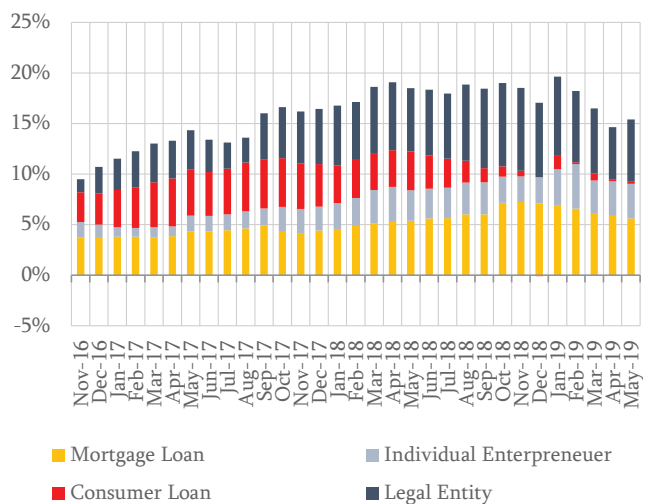
Consumer and mortgage credit lending growth has slowed consistent with a tightening of credit conditions, while corporate lending has increased (see Figure III.4 and Figure III.5). Despite the tightened conditions, the risk appetite in banks remains strong particularly in the mortgage market. Mortgage lending spreads have fallen substantially over the past few years. According to the credit conditions survey, representatives of the banking sector expect demand for consumer loans to fall, but demand for business loans to rise.

Figure III.3. Decomposition of YoY Change in Credit-to-GDP Ratio (%)



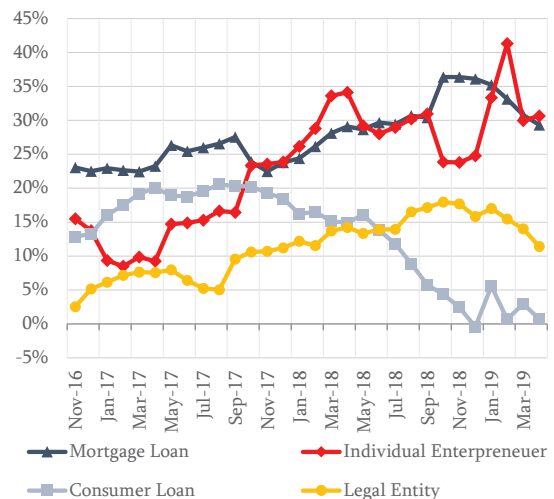
Source: NBG.

Figure III.4. Decomposition of the Annual Growth Rate of Bank Loans (Excl. FX impact)



Source: NBG.

Figure III.5. Annual Growth Rate of Bank Loans (Excl. FX impact)



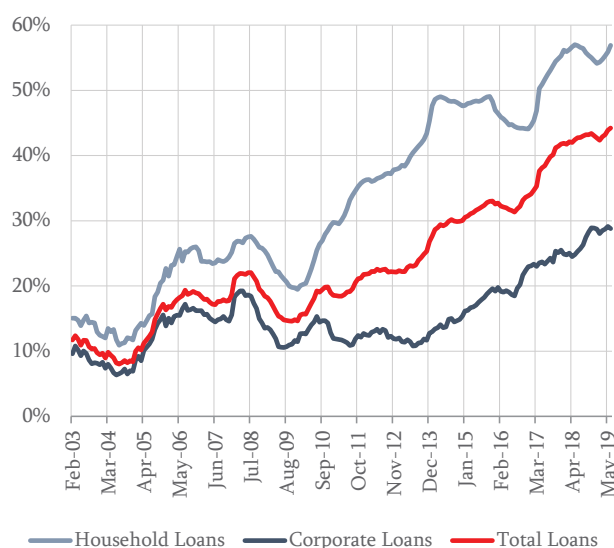
Source: NBG.

Despite a significant decline in recent years, dollarization remains one of the main challenges facing the financial sector (see Figure III.6). In May 2019, the growth of the loan portfolio was primarily driven by an increase in domestic currency lending; however foreign currency lending also increased substantially. It should be noted that loans issued in euros more than doubled in May 2019, compared to same period of previous year. Banks maintain a closed FX position that limits the direct impact of foreign exchange rate fluctuations. However, the banking sector remains quite vulnerable to exchange rate fluctuation, because this increases credit risk (most FC borrowers are not hedged). For that reason, the NBG requires that banks maintain an additional capital buffer for currency-induced credit risk.

The banking sector maintains solid profitability and this is expected to continue in the coming years. Strong profitability has mainly been supported by wide interest margins²⁹ (5 percent) and low credit costs. The latter have largely been driven by strong overall economic performance, liberal requirements on loan recovery procedures and historically high credit standards on the significant part of the portfolio. Over the recent period, interest margins have been slowly declining, mainly due to increased competition and improved efficiency.³⁰ However, this should not be translated as lower profitability since increased efficiency leads to lower costs. In addition, the growth of non-interest income is also supportive of banks' profitability. Over the last three years, the aggregate return on equity was above 15 percent, while the return on assets³¹ (ROA) was around 2.5 percent (see Figure III.7), which exceeds the corresponding levels in similar countries³² (see Figure III.8). This strong profitability provides Georgian banks with a significant buffer to absorb potential shocks.

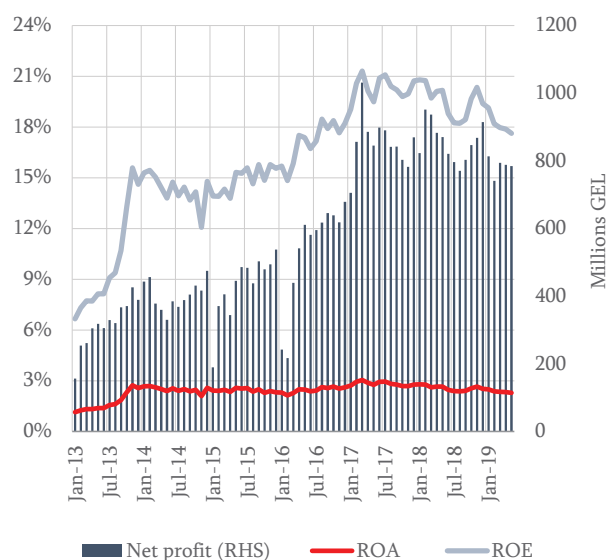
A possible increase of local FX rates coupled with plausible interest rate risk mispricing may pose risks to the banking sector's profitability. For the last five years, despite increasing LI-BOR (London Inter-bank Offered Rate) rates, the accumulation of foreign currency liquidity as a result of reduced demand for FC loans and increase in reserve requirement for FC funds has facilitated a reduction of FC deposit rates (see Figure III.10). As of June 2019, the spread between the FC deposit rate and the six month

Figure III.6. Larization at Fixed Exchange rate



Source: NBG.

Figure III.7. Profitability in Banking Sector



Source: NBG.

29 Net interest income over interest-earning assets.

30 Efficiency is measured as the cost-to-income ratio and/or operating costs-to-average assets ratio.

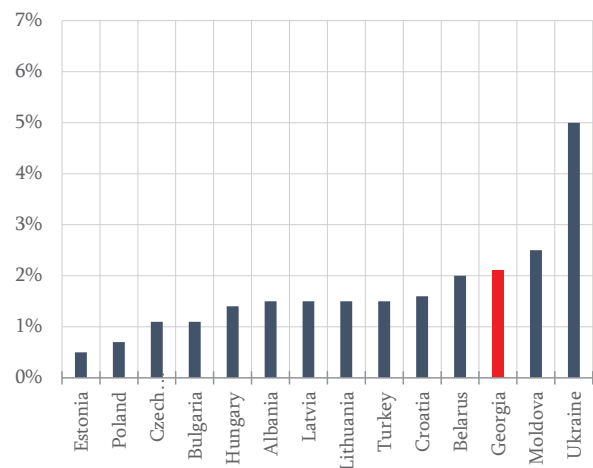
31 Net profit over the average value of total assets.

32 Here we define similar countries as members of CIS and CEE countries.

LIBOR rate is close to zero, which may encourage depositors to search for more profitable investment opportunities. Considering this, despite the existing FC liquidity buffers, banks might need to increase the spread, which might negatively affect their interest margins and profitability. However, according to the sensitivity analysis, the expected impact on the profitability is low. This is mainly due to the current level of profitability and the share of foreign currency deposits in total assets.

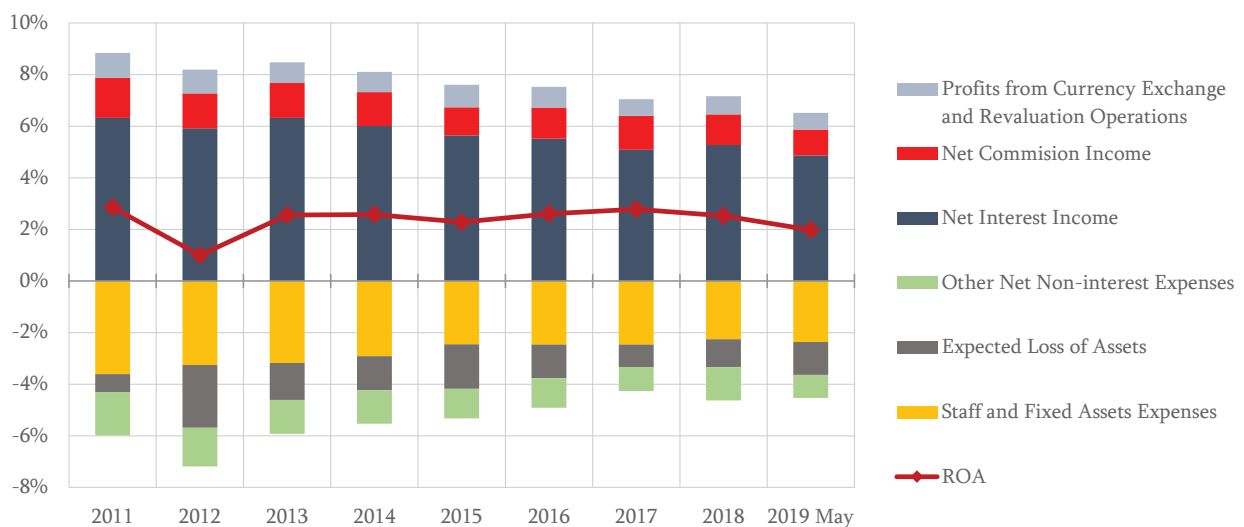
The banking sector remains well-capitalized against potential shocks (see Figure III.11). In early 2018, capital requirements were strengthened with the introduction of the new capital adequacy requirements of the Basel III framework. As a result, the quality of capital in commercial banks has improved and became more risk-oriented. Updated minimum capital requirements are: 4.5, 6 and 8 percent for Common Equity Tier 1, Tier 1 and Total Regulatory Capital, respectively. Furthermore, banks are required to hold an additional Combined Buffer (conservation, countercyclical and systemic buffers) through Common Equity Tier 1, and capital buffers under Pillar 2 (unhedged currency induced credit risk buffer, credit portfolio concentration risk buffer, net stress-test and net GRAPE buffers)³³ should be held proportionately to minimum capital requirements. As of May 2019, Tier I capital coefficient amounted 14 percent, while regulatory capital coefficient increased to 17 percent. Most banks maintain solid capital buffer (see Figure III.12).

Figure III.8. ROA in Banking Sector as of 2018: Cross-Country Comparison



Source: NBG.

Figure III.9. ROA Decomposition for the Banking Sector



Source: NBG.

33 For details, see chapter IV of this report.

As dollarization decreases, banks are able to become more leveraged, reflecting the fact that the capital requirements for FC loans are higher than for GEL loans (see Figure III.13). Unlike the capital adequacy ratio, which is calculated as a portion of risk weighted assets, the leverage ratio³⁴ is set according to total assets. Therefore, substitution of dollar assets, which are assigned higher risk weights, with GEL assets can increase leverage ratio while capital adequacy remains the same. In addition, an increase in mortgage lending, which has lower risk weights compared to other types of loans, enables banks to be more leveraged. It should be noted, that in 2018, the NBG, in line with the Basel framework, adopted a minimum leverage requirement for Georgian banks. Banks must meet the requirement of a minimum 5 percent leverage ratio at all times. All banks are currently compliant with this requirement with a comfortable buffer.

The share of Non-Performing Loans (NPLs) in total credit has decreased over the recent period and remains low (see Figure III.14 and Figure III.15). The NPL structure has also improved, as the NPL ratio in the highest-risk “loss” category dropped slightly in favour of loans in the two lower-risk categories (substandard and doubtful loans). However, it should be noted that in the ascending credit cycle the share of non-performing loans usually decreases. A decomposition of the annual change in NPLs confirms that during the last two years the main driver of the decline in the NPL ratio was high credit growth (see Figure III.16). Besides that, bank credit losses are expected to remain low in the immediate future.

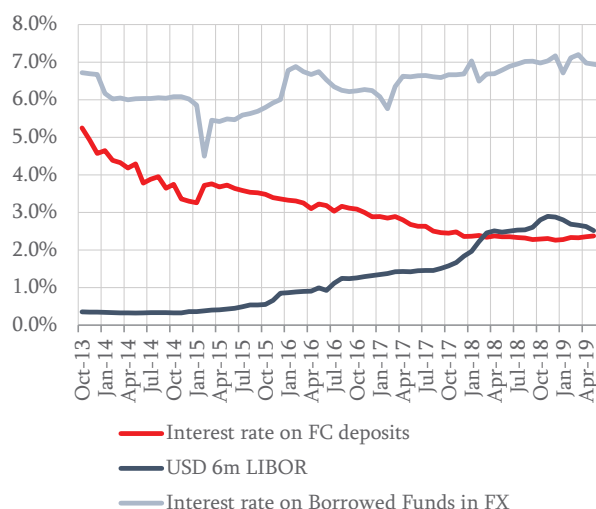
NPL coverage seems sufficient. The overall NPL coverage³⁵ was at 85 percent in May 2019 (see Figure III.17). Sectoral analysis of NPL coverage reveals that the current level is sufficient for the current NPL loss rate in all sectors.

The banking sector maintains adequate liquidity and its resilience to short-term liquidity shocks remains high. The Liquidity Coverage Ratio, which shows the proportion of net outflow of cash during a 30-day stress period that is covered by liquid assets, is well above the required 100 percent in both domestic and foreign currencies. It should be noted, that if needed, the NBG can provide liquidity assistance to banks in the national currency, but it has very limited ability to do so in foreign currency. As a result, banks with a heavy reliance on external funds are vulnerable to changes in market sentiment and sudden outflows. During

34 The leverage ratio is defined as the ratio of tier 1 capital to total exposures.

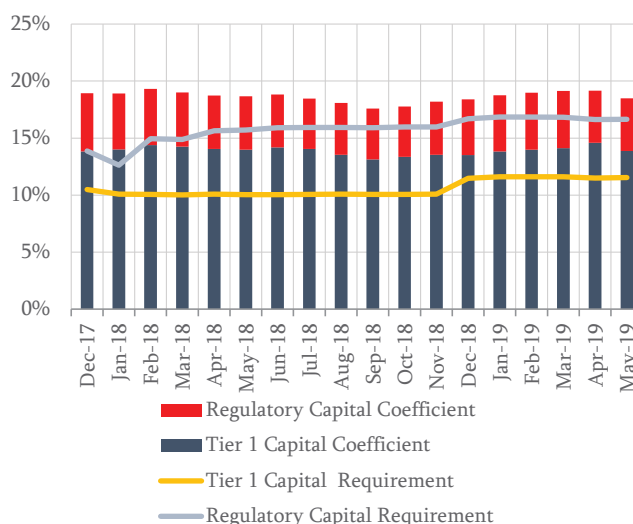
35 NPL coverage is defined as provisions over NPLs.

Figure III.10. Comparison of FX and Libor rate



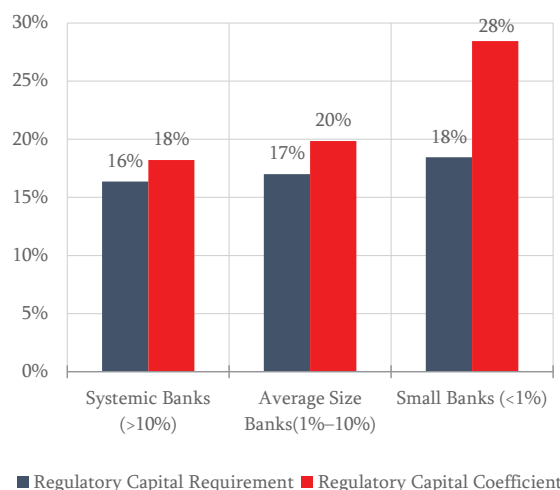
Source: NBG, Bloomberg.

Figure III.11. Capital Adequacy in the Banking Sector (Basel III)



Source: NBG.

Figure III.12. Distribution of Capital Adequacy in the Banking Sector (as of May 2019)



Source: NBG.

the last three years, in order to mitigate these external risks, the NBG has raised the reserve requirements on foreign currency funding from 15 to 30 percent. It should be noted that 25 percent of foreign currency reserves are not counted as liquid assets in the LCR ratio. In addition, the scheduled implementation of the Net Stable Funding Ratio³⁶ (NSFR) standard will further limit the funding risk by promoting the use of more stable sources of funding among banks.

The share of non-resident deposits as a proportion of total deposits has remained stable, albeit at the relatively high level of 17 percent. The ability of banks to attract non-resident deposits can be attributable to a number of factors: low US rates in the aftermath of the global financial crisis, a gradual increase in non-residents' risk appetite and improving country credit ratings. In response to the build-up of these deposits, in 2013 the NBG introduced higher marginal liquidity requirements, which have helped slow the inflow. In addition, a large proportion of these non-resident depositors are either employed in Georgia or are connected to Georgia in other ways (e.g. Georgians living abroad), and this contributes to the stability of non-resident deposits. Nevertheless, considering the lowered FC rates in Georgia and increased LIBOR rates, the sensitivity of this funding to interest rates is likely to be higher.

In order to maintain the sustainable growth in domestic currency lending in the banking sector, a higher rate of deposit growth will be needed. The local currency lending is outpacing local currency deposit growth, which is reflected in increasing loan-to-deposit ratio. Going forward it will be important for Georgian banks to be able to attract more domestic currency funding from the market. By contrast, because of the NBG's larization policy, the loan-to-deposit ratio for foreign currency is improving. This means that loans are financed through more stable funding sources, which makes the banking sector less sensitive to liquidity risks.

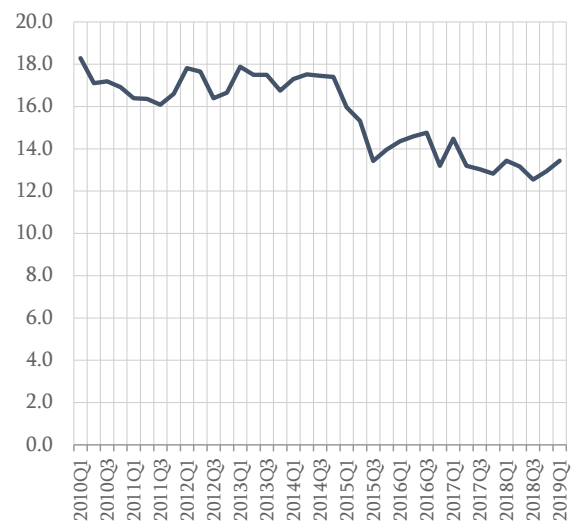
The share of floating rate loans in both local and foreign currency is increasing. Although this decreases the interest rate risk for banks, it could raise borrowers' credit risk. A sharp rise in interest rates could lead to debt-servicing problems for some borrowers and lead to an

36 For more details on NSFR, see chapter IV of this report.

37 According to the NBG methodology. NPL includes substandard loans together with doubtful and loss loans.

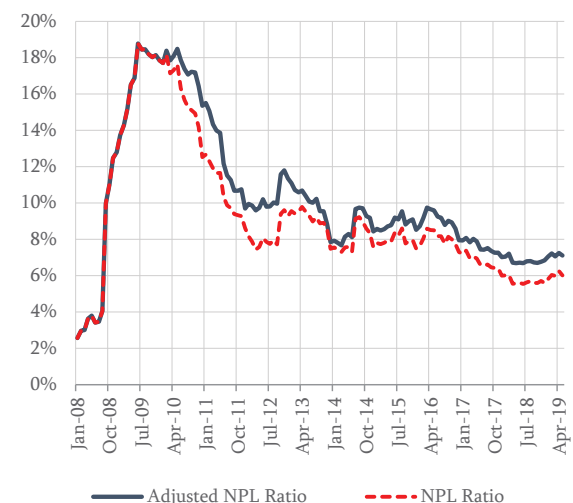
38 According to the IMF methodology. NPL includes loans when payments are past due by 90 days or more; includes doubtful and loss loans.

Figure III.13. Capital to Assets Ratio for the Banking Sector



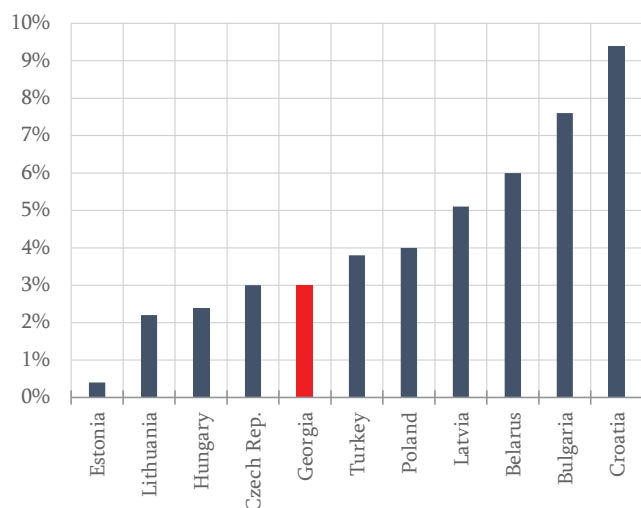
Source: NBG.

Figure III.14. NPL³⁷ Ratio for Bank Loans



Source: NBG.

Figure III.15. NPL³⁸ to Gross Loans by Country



Source: NBG.

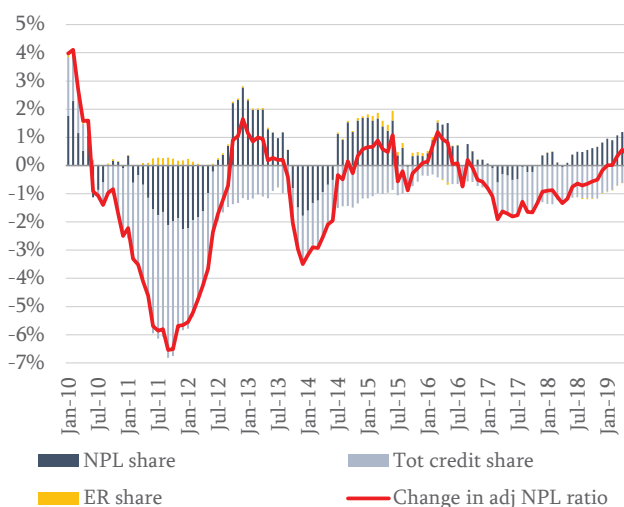
associated increase in credit risk. This is likely to be a lesser problem for local currency lending, as interest rate movements are most likely to be aligned with economic cycles (as higher interest rates will go hand in hand with stronger economic conditions). In contrast, foreign rates may negatively correlate with domestic economic growth and therefore pose a greater threat to borrower’s credit quality. In addition, the country risk premium, which has fallen to historically low levels over recent years, should also be taken into account. A potential reversal of sovereign risk premia may accelerate the impact of FX interest rate movement. In order to prevent the underestimation of foreign currency risks, the NBG recommended that financial institutions take proper account of foreign currency-related interest rate risk when pricing their loans. As of May 2019, the share of floating rate loans reached 42 percent in FC and 36 percent in local currency.

Georgia’s banking sector is highly concentrated, which is a concern for the country’s financial stability. However, it also helps achieve economies of scale and thus, leads to higher efficiency. High concentration has a number of important implications for financial stability. On one hand, high levels of concentration can lead to improved efficiency, higher margins, higher profits and therefore larger capital buffers. Moreover, it enables large banks to better diversify their exposure and improve their risk management. On the other hand, high levels of concentration might be associated with low competition, leading to higher interest rates, which in turn results in higher risk taking among borrowers. However, in case of Georgia, interest rate spreads have a declining trend. It should also be noted that high concentration creates the problem of moral hazard among banks since the largest ones are systemically important and potentially “too big to fail”. In order to mitigate these risks, systematically important banks are required to maintain an additional capital buffer. One of the reasons behind the high level of concentration in the sector is the limited ability of small banks to compete given the absence of economies of scale. An increase in the operational efficiency of small banks and a digitalization of their services can support the competition among the banks and reduce the concentration in the banking sector.

National Bank of Georgia welcomes development of the services based on new financial technologies, which through more cost-effective and customer-centric alternatives promote competition and increase consumer welfare.

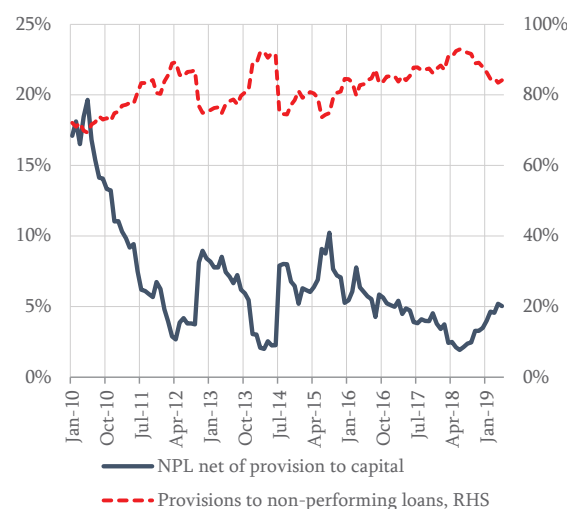
39 Adjusted NPL accounts for loan write-offs and recoveries during last 12 month.

Figure III.16. Decomposition of Annual Change in the Adjusted³⁹ NPL Ratio



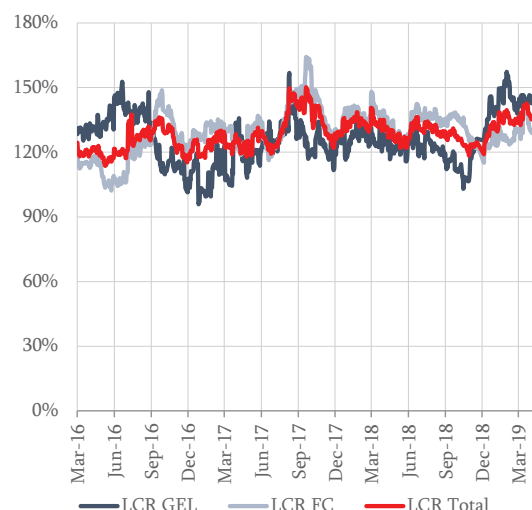
Source: NBG, Bloomberg.

Figure III.17. NPL and Provisions in the Banking Sector



Source: NBG.

Figure III.18. Liquidity Coverage Ratio (LCR) for the Banking Sector



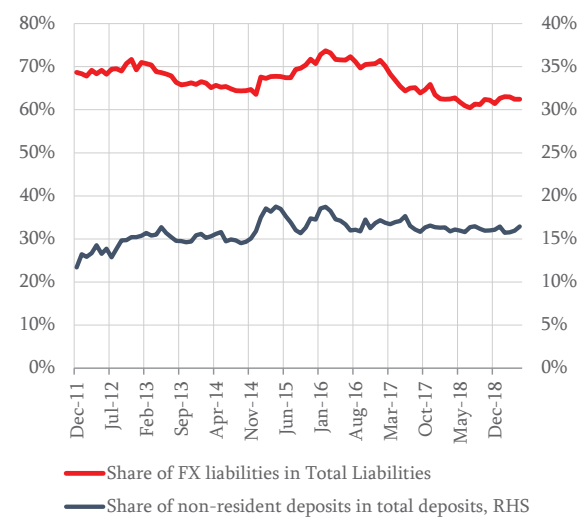
Source: NBG.

Services based on electronic communication channels from simple payments to e-commerce platforms and digital bank services are rapidly expanding. The development of these services is driven by a combination of three technological trends: increased computing power, reduced data storage costs, and ease of information collection by electronic means. At the same time, there are risks associated with the use of personal data, cyber security, and the development of a risky non-regulated financial sector. In response to these challenges, the NBG established Department of Financial and Supervisory Technology whose functions include analysis of the new financial technologies implementation, risk evaluation of new models, and support the sustainable development of financial technologies. Also, one of the important areas is the use of new technologies, including artificial intelligence, in the process of supervisory data processing to enhance the effectiveness of financial supervision.

Increasing use of technology in the financial system has heightened the risk to financial stability posed by cyberattacks. Cyberattacks, including ransomware and distributed denial-of-service (DDoS) attacks, have increased worldwide. These aim to gain unauthorized access to banking account or to valuable information in order to steal, disrupt or destroy. Such attacks can affect the financial system through various channels, including through the loss of data integrity, an interruption in the availability of core financial services, and the corruption of trade or transaction records. A significant concern is the likelihood of an attack damaging other parts of the highly interconnected financial system and causing a possible loss of confidence. In 2018, a total of 23 466 operational loss events were recorded amounting to 22.9 million GEL, which was a 0.3 percent increase compared to 2017. Total operational losses amounted to 0.7 percent of gross income.

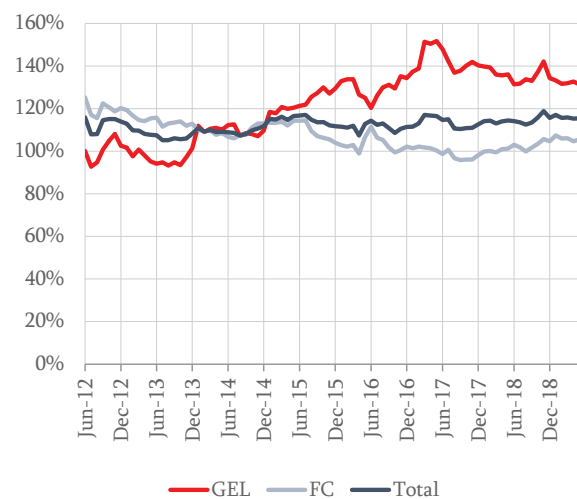
The National Bank of Georgia is actively monitoring developments in the banking sector in terms of cyber security. In 2019, cybersecurity requirements were introduced in the Georgian banking sector to cover, among other things, responses to cyber-incidents, penetration testing, and information systems audit requirements. In addition, commercial banks are required to implement and regularly evaluate their cyber security controls. It is also important to have business continuity and preparedness plans in place to deal with a potentially large-scale cyber incident. It should be noted that,

Figure III.19. Liability Structure



Source: NBG.

Figure III.20. Loan-to-Deposit Ratio



Source: NBG.

according to the Global Cybersecurity Index,⁴⁰ Georgia ranks in 18th place among 175 countries and is in 9th place in Europe.

During the past year, the National Bank of Georgia strengthened the supervision framework for non-banking institutions. The NBG supervises and regulates non-banking institutions, including microfinance organizations, credit unions, loan-issuing entities (specifically those entities against whom 20 or more individuals have loan obligations) and currency exchange units. The share of non-banking institutions in total financial sector assets is around 5.5 percent. To ensure the stable functioning of these institutions and to protect their credi-

⁴⁰ https://www.itu.int/en/ITU-D/Cybersecurity/Documents/draft-18-00706_Global-Cybersecurity-Index-EV5_print_2.pdf

tors, a legislative base has been created. During 2018, capital and liquidity requirements were introduced to strengthen the resilience of microfinance organizations. Capital and liquidity requirements were both set at 18 percent, but if the ratio of attracted funds from individuals to supervisory capital is more than 50 percent then the requirements rise to 24 and 25 percent respectively. It should be noted that in December 2018 the capital adequacy coefficient of microfinance organizations equalled 30 percent, while the liquidity coefficient stood at 34 percent.

During the past years, the lending practice of non-banking institutions led to accumulation of risks in the financial system and increased sector's vulnerability. In the absence of regulation, the essence of microfinance organization was distorted and high risk lending practices have been established. Above mentioned risky business model was financed by funds raised from natural persons. Given the low transparency of this sector, there have also been flagrant violations of consumer rights. This practice could have led to severe consequences for the large part of the population and for the economy as well. Establishment of responsible lending practices and improvement of non-banking sector's legislation will facilitate transparency, stable development and resilience of this sector. Moreover, introduction of capital and li-

quidity requirements, will help this sector to become sound, safe and more attractive for domestic and foreign investors.

According to the available estimates, the share of shadow banking⁴¹ in Georgia is low, but it has increasing tendencies. As of now, the risks stemming from the shadow banking to financial stability are not systemic. Georgia has one of the highest levels of household accessibility to formal banking services in the world.⁴² As a consequence, the demand for shadow banking in the country is low. Despite this, in previous years, the number of unregulated online lending companies appearing on the market increased. These were issuing high interest rate loans to the more financially vulnerable parts of the population, which translated into excessive lending and worsened those households' financial conditions. During the previous year, as a result of the introduction of a 50 percent cap on effective interest rates, a broadening of the supervisory authority of the NBG, and the implementation of lending standards, the number of such institutions operating on the market significantly declined. The NBG continues to perform systematic monitoring of consumer rights and recommends that borrowers use formal banking services when applying for a loan because shadow banking is associated with high financial costs and increasing borrower vulnerability.

41 Credit intermediation involving entities and activities (fully or partly) outside of the regular financial system.

42 Source: <http://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&sid=1460043522778>.

Macro-Financial Risk Scenarios

A quantitative assessment of financial sector resilience in case of different macro-financial risk scenarios is an important part of financial stability analysis. Macro-financial risk scenarios are based on the risks and vulnerabilities discussed in the previous chapters. In order to inform macroprudential policy about existing trade-offs, the impact of adverse external developments on the domestic economy and financial system under different risk scenarios is assessed over a three-year horizon.

Two risk scenarios are considered in order to capture the downside risks stemming from adverse global and regional developments. One of the scenarios reflects reasonably likely and moderately adverse outcomes, while the other corresponds to unlikely, but plausible, instances of severe stress. This approach permits examination of how the domestic economy would perform under varying degrees of stress and reveals the possible nonlinear effects of external shocks. The risk scenarios are compared to a baseline, which is based on the NBG's macroeconomic forecast published in the July 2019 Monetary Policy Report⁴³ and on other consensus forecasts from external sources.

The moderate risk scenario considers escalated geopolitical risks and adverse economic conditions being reflected in slower growth and increased risk premia in the region along with continued trade tensions feeding policy uncertainty on global markets. Under this scenario, the economic outlook for the region is deteriorating due to uncertainties and political tensions in Russia and Turkey. The elevated risks accompanying the economic and political instability in these countries lead to increasing risk premia and capital outflow in the region. Uncertainties about the global economy also increase in the midst of rising protectionism and trade and technology tensions causing a slowdown in global growth. Risk-free rates are not expected to rise as the normalization of monetary policy halts in developed countries. However, the economies of the region still face tighter financial conditions, which are predominantly driven by higher risk premia. As a consequence of the increased risks in the region and the deteriorating economic environment in trading partner countries, the domestic economy faces a decline in investment inflows, demand for exports, tourism revenues and money transfers. Consequently, as domestic and external demand weaken, economic activity drops, unemployment picks up and investment is deferred.

In this scenario, the deteriorated current ac-

count, which stems from weaker external inflows, sparks a depreciation of the local currency. The latter leads to an increase in the debt burden of the dollarized loan portfolio. Because of the deteriorated economic outlook, real estate prices also drop considerably. Consequently, the financial sector faces higher credit losses and shrinking profits as collateral value and debt servicing capacity decline in both households and companies. As the credit risk builds up, loan-issuing entities increase their interest rate mark-ups on new loans, causing a further slowdown in economic activity.

Despite the weak demand, inflation increases above the target as depreciation pushes up import prices and intermediate costs. Monetary policy is tightened moderately to contain inflation expectations. The policy rate returns to its neutral level by the end of the scenario horizon as the impact of the external shocks gradually fades and growth starts rebounding. In this scenario, the cumulative drop in GDP growth from the baseline over the three-year horizon is 9 percentage points, which constitutes 1.2 standard deviations of three-year cumulative growth rates observed during the 1998-2018 period.

The developments as discussed in the moderate risk scenario are intensified to construct the severe risk scenario. In particular, in the hypothetical scenario, global growth slows down and risk aversion considerably increases as uncertainty regarding international trade and investment heightens. As a result, risk premia rise, leading to a reversal of capital inflows in developing markets. The economies of the region suffer even more from capital outflow and slower growth since Russia and Turkey face sanctions along with subdued global growth. On top of that, the hypothetical scenario also considers the possibility that the Russian restrictions imposed on Georgia are prolonged and extended as political tensions spike. The severely deteriorated outlook, occurring against the backdrop of adverse external developments, leads to plummeting consumer and business confidence.

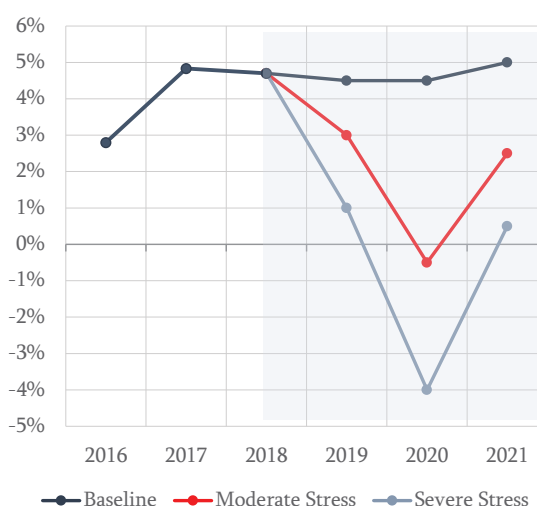
In the severe risk scenario, the slowdown of global growth, coupled with rising regional ten-

⁴³ For detailed forecast, please see Monetary Policy Report July 2019. <https://www.nbg.gov.ge/index.php?m=349&lng=eng>

sions, cause foreign currency inflows from trade as well as money transfers to decline abruptly. Moreover, as the escalated regional risks translate into higher risk premia, there is a sudden stop in investment inflows, causing a sizable depreciation of the domestic currency. The latter triggers balance sheet effects on unhedged foreign currency borrowers and contributes to financial distress. The financial system suffers sizable credit losses and tightens lending conditions, exacerbating the downturn. The deterioration of consumer and business confidence causes a sizable drop in domestic consumption and investment expenditure.

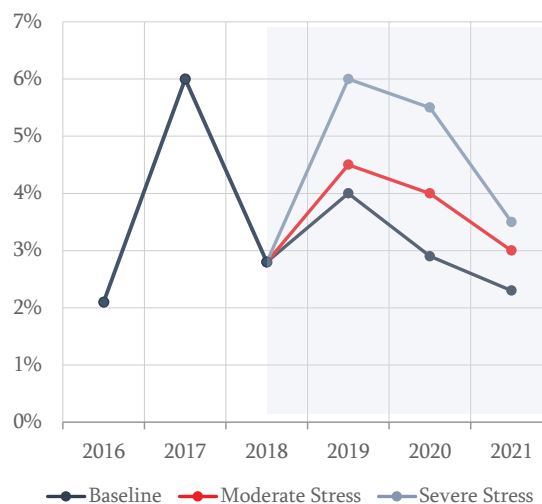
Since the downturn of the credit cycle is coupled with an economic recession, the impact of this scenario is much more severe on the real economy. Monetary policy tightens and remains contractionary through the scenario horizon in order to curb inflation expectations and mitigate the damage caused by capital outflows. The recession is prolonged, causing cyclical weaknesses to hamper potential growth as well. In the severe risk scenario, the cumulative deviation of GDP growth from the baseline over the three-year horizon is 18 percentage points, which corresponds to 2.3 standard deviations of three-year cumulative growth rates observed throughout the period 1998-2018. Table 2 summarizes the key macroeconomic and financial variables under the moderate and severe risk scenarios.

Figure III.21. Risk Scenarios: Annual Real GDP Growth (YoY)



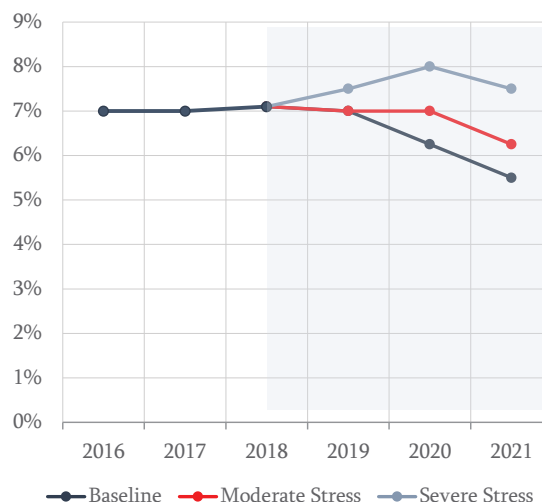
Source: NBG.

Figure III.22. Risk Scenarios: CPI Inflation (YoY)



Source: NBG.

Figure III.23. Risk Scenarios: Monetary Policy Rate



Source: NBG.

Table 2. Risk Scenarios

Variable \ Scenario	Current value*	Baseline scenario			Moderate risk scenario			Severe risk scenario		
		2019	2020	2021	2019	2020	2021	2019	2020	2021
Fed Funds Rate	2.5%	-0.5 pp	-0.25 pp	+0.0 pp	+0.0 pp	+0.5 pp	+0.5 pp	+0.25 pp	+0.5 pp	+1.0 pp
ECB Policy Rate	0%	+0.0 pp	+0.25 pp	+0.5 pp	+0.0 pp	+0.5 pp	+0.75 pp	+0.25 pp	+1.0 pp	+1.0 pp
Country Risk Premium	2.5%	+0.0 pp	+0.0 pp	+0.0 pp	+0.5 pp	+1.5 pp	+0.0 pp	+1.0 pp	+2.5 pp	+0.0 pp
GEL/USD Nominal Exchange Rate	2.87	Appr. 0%	Appr. 0%	Appr. 0%	Depr. 10%	Depr. 5%	Appr. 5%	Depr. 15%	Depr. 10%	Appr. 5%
Nominal Effective Exchange rate (NEER)	269.2	Appr. 0%	Appr. 0%	Appr. 0%	Depr. 5%	Depr. 3%	Appr. 2%	Depr. 10%	Depr. 5%	Appr. 5%
Change in Real Estate Prices (in GEL, YoY)	3.0% (2018)	+4.0%	+2.9%	+2.5%	-5.0%	+0.0%	+5.0%	-10%	-5.0%	+0.0%
Real GDP Growth (YoY)	4.7% (2018)	4.5%	4.5%	5.0%	3.0%	-0.5%	+2.5%	1.0%	-4.0%	0.5%
Unemployment Rate	12.7% (2018)	-0.0 pp	-0.0 pp	-0.25 pp	+0.5 pp	+2.0 pp	+1.0 pp	+1.0 pp	+3.0 pp	+1.5 pp
CPI Inflation (YoY)	2.6% (2018)	4.0%	2.9%	2.5%	4.5%	4.0%	3.0%	6.0%	5.5%	3.5%
Monetary Policy Rate (%)	6.5%	+0.5 pp	-0.75 pp	-0.75 pp	+0.5 pp	-0.0 pp	-0.75 pp	+1.0 pp	+0.5 pp	-0.5 pp

* Current values correspond to the data available up to June 2019 unless stated otherwise

Source: NBG staff estimates.

Financial Sector Resilience

This section provides a quantitative assessment of the resilience of the banking sector in terms of the macro-financial risk scenarios discussed above. The stress test results demonstrate that the banking sector as a whole would remain resilient even in the event of an adverse shock. Despite significant credit losses, banks have large enough capital buffers to absorb adverse shocks and maintain their overall capital ratios above the regulatory threshold.

The main purpose of stress testing is to assess banks' resilience in the event when adverse economic shocks are realized. This tool enables central banks to determine appropriate mitigation actions and formulate policies aimed at ensuring the uninterrupted provision of financial intermediation services under stress conditions, limiting the duration of stress and contributing to faster economic recovery. It should be noted that stress tests provide an analysis of hypothetical risk scenarios, the attained results are conditional.

The top-down solvency stress testing approach employed by the NBG is based on the IMF methodology used during the Financial Sector Assessment Program (FSAP) in Georgia.⁴⁴ The methodology incorporates the Next Generation Balance Sheet Stress Testing model (Schmieder et al., 2011), which is a widely used framework for modelling banks' balance sheet items and calculating the impact of risk scenarios on their capital adequacy. There are two structural components in the framework: a satellite model and a sensitivity-based income model. Satellite model represents the relationship between non-performing loans and main macro-economic variables, while a sensitivity-based income model computes the trajectory of net income before loan loss provisions. However, it should be noted that these satellite models are based on a relatively short time series, therefore they might not capture the full effect of an adverse shock.

The risk scenarios are analysed in the context of their impact on the main drivers of banks' capital adequacy ratios. To assess banks' solvency, capital ratios were calculated by dividing the forecasted capital by the projected amount of risk-weighted assets. The capital projection was calculated by adding projected net income to current capital and subtracting the increase in stressed-induced provisioning. Similar to the European Banking Authority's (EBA) methodology, the stress testing is based on the assumption of static balance sheet and does not assume any active response from banks or banking supervisors to the shocks in the system. The test has a three-year horizon

(2019-2022) and no maturity adjustments to assets over this period are considered.

In the baseline and moderate risk scenarios, the banking sector remains well capitalized. In the baseline scenario, persistent economic growth improves the ability of households and non-financial corporations to service their debts. The share of non-performing loans, which measures credit risk, remains low. In addition, banks maintain solid profitability. Over the test horizon, ROA is around 2.5 percent. Consequently, the sector's aggregate capital ratio remains above 18 percent at the three-year horizon, staying well above the regulatory minimum. Individually, all banks are able to maintain adequate levels of capital. It should be noted that in the moderate risk scenario, the income generated is sufficient to cover all losses and overall capital adequacy does not deteriorate either.

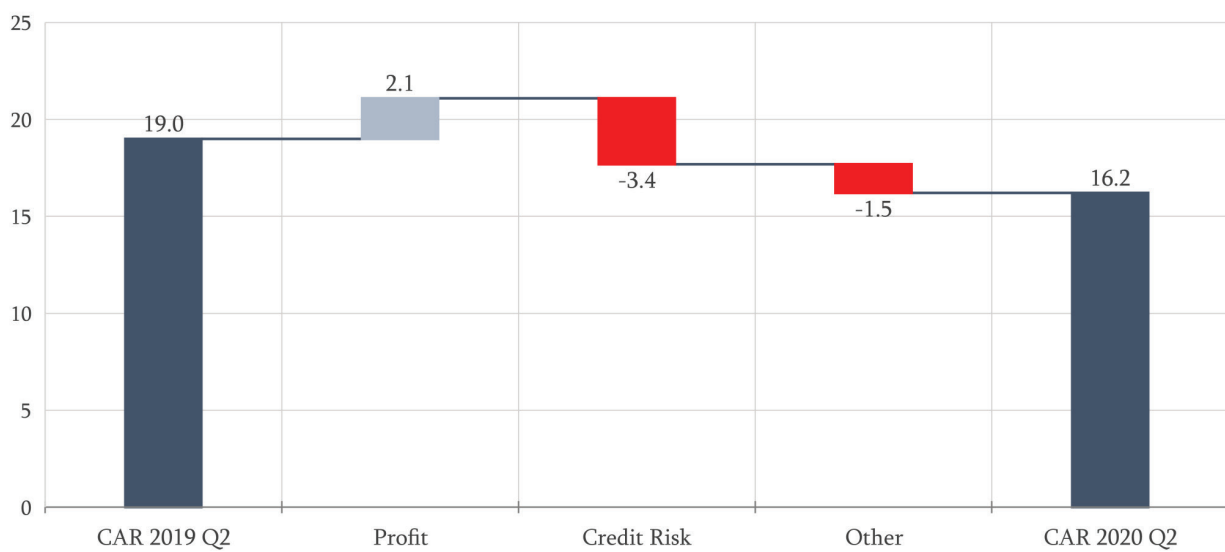
The severe risk scenario would impose significant losses on the banking sector, but the sector's overall capital ratio would remain above the regulatory threshold. The assumed deterioration of the economic environment compresses interest margins and leads to lower net income. In addition, credit losses increase significantly, while losses arising from market risk remain limited. During the one-year horizon, the overall generated income would increase the capital ratio by 2.1 percentage points, but this is overwhelmed by increased credit and other losses (-4.9 percentage points). As a result, the capital ratio falls significantly in the adverse scenario. However, existing capital buffers would ensure the mitigation of potential losses if this crisis scenario were to emerge. Nonetheless, some banks would reveal vulnerabilities and would need additional capital to maintain the minimum capital adequacy ratio. However, according to our evaluation, banks' ownership structure would enable them to attract additional capital. Therefore, the capital loss identified under this scenario is not significant enough to constitute a risk to the sector's stability or resilience, and it should be noted that after the second year of stress horizon, banks' capital adequacy starts to gradually recover (see Figure III.25).

⁴⁴ <https://www.imf.org/external/pubs/ft/scr/2015/cr1507.pdf>

Based on the results of the stress test, NBG will set additional stress test buffers for individual banks. The ability to do this is one of the most important components of the Pillar 2 Framework, which aims to evaluate the capital adequacy of banks based on stress scenarios and macroeconomic risk factors. The stress scenarios change counter-cyclically, making the stress tests buffer an additional macroprudential instrument. In addition to macroeconomic parameters, these scenarios include the distribution of shocks according to different sectors of the economy, allowing banks to stress

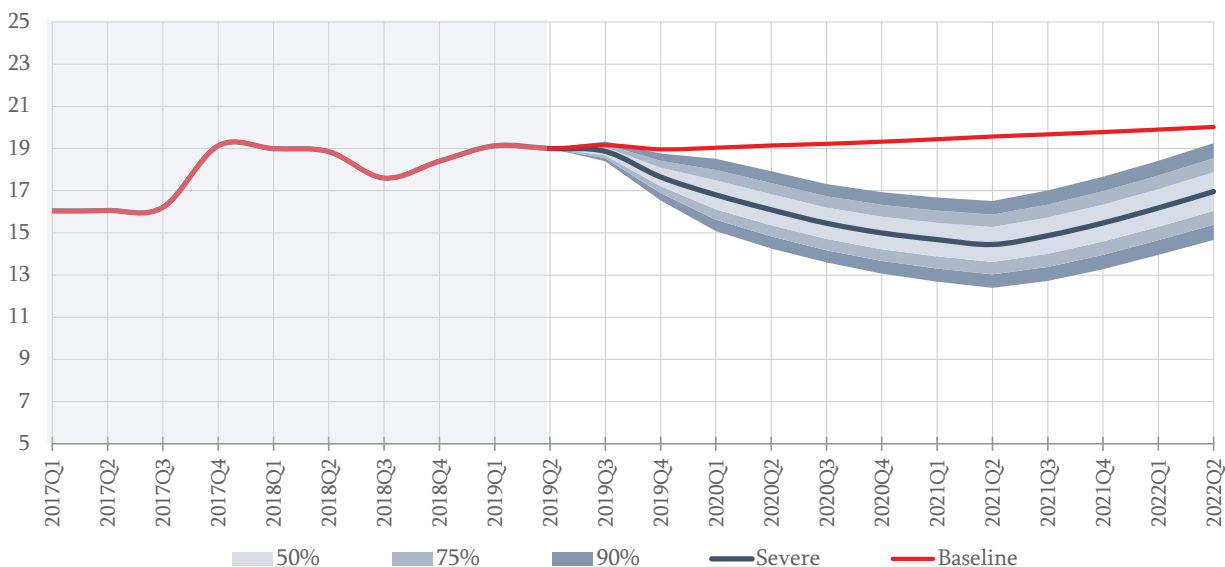
exposures at the transaction level and analyse borrowers' financial sustainability. The use of stress scenarios makes macroprudential policy more forward looking. This practice reduces dependence on historical data, captures the nonlinearity of results, reduces modelling errors and improves comparability among different banks. In 2018, the NBG conducted supervisory stress testing for risk assessment at the individual bank level. Going forward, the NBG will set an additional stress test buffer based on the results of the 2019 stress tests.

Figure III.24. Decomposition of the Change in the Capital Ratio of the Banking Sector in the Severe Risk Scenario (%)



Source: NBG.

Figure III.25. Capital Adequacy under the Baseline and Severe Risk Scenarios (%)



Source: NBG.

Box 4. The Effect of the Introduction of IFRS 9 on Loan Loss Provisions

A new international accounting system, International Financial Reporting Standards (IFRS) 9, became effective from 1 January 2018. This replaced the previous accounting standard – IAS 39. IFRS 9 guides the classification and valuation of financial assets and requires the measurement of impairment loss allowances based on an expected credit loss (ECL) accounting model rather than on an incurred loss accounting model. Within the IFRS 9 framework, credit risk assessments should incorporate forward-looking analysis. In particular, when assessing expected credit losses, special attention should be paid to the analysis of macroeconomic and financial factors, expected risks and dynamics.

To ensure the transparent, consistent and efficient implementation of IFRS 9 by financial institutions, from 2018 the NBG started regularly (twice a year) publishing macroeconomic and financial forecasts (baseline) and alternative risk scenarios. The scenarios are orientated on the medium term (3-4 years). The use of the NBG’s macroeconomic forecast scenarios is not mandatory and financial institutions may add to or change them, but they are obliged to justify any such modifications. In addition to risk scenarios, the NBG developed the IFRS 9 impairment guidelines, which are based on international experience and provide guidance to financial institutions for measuring loss allowances under IFRS 9.

In the framework of IFRS 9, financial assets are divided into the following three stages based on the change (deterioration) in an asset’s credit risk compared to the initial recognition rate:

Stage 1 - “performing” assets that had no significant increase in credit risk since initial recognition;

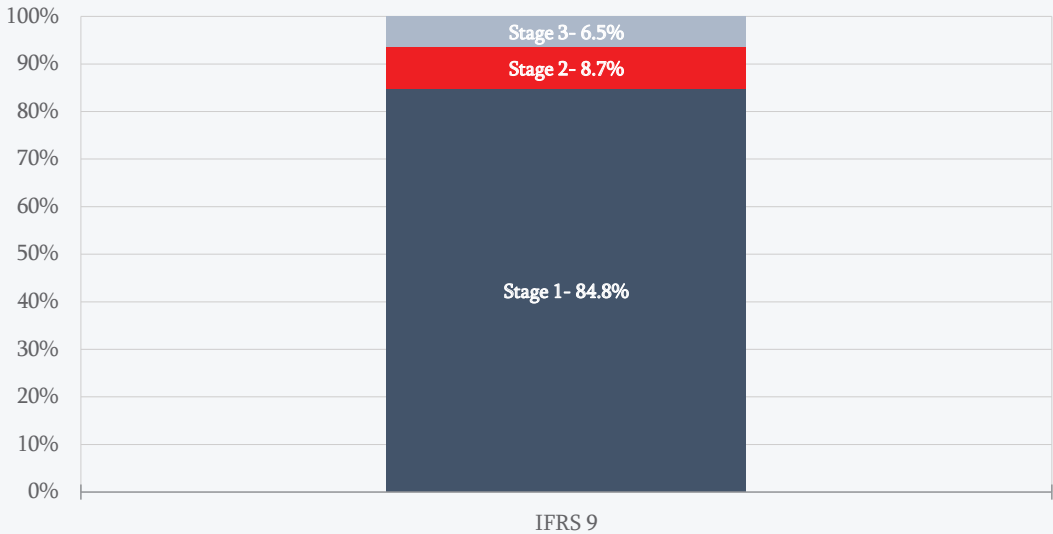
Stage 2 - “underperforming” assets that had a significant deterioration in credit risk since initial recognition;

Stage 3 - “non-performing” assets that are credit-impaired.

According to the new IFRS 9 standard, as of January 2018, 84.8 percent of the aggregate loans in commercial banks were classified as Stage 1; 8.7 percent as Stage 2; and 6.5 percent as Stage 3 (see Figure B10).

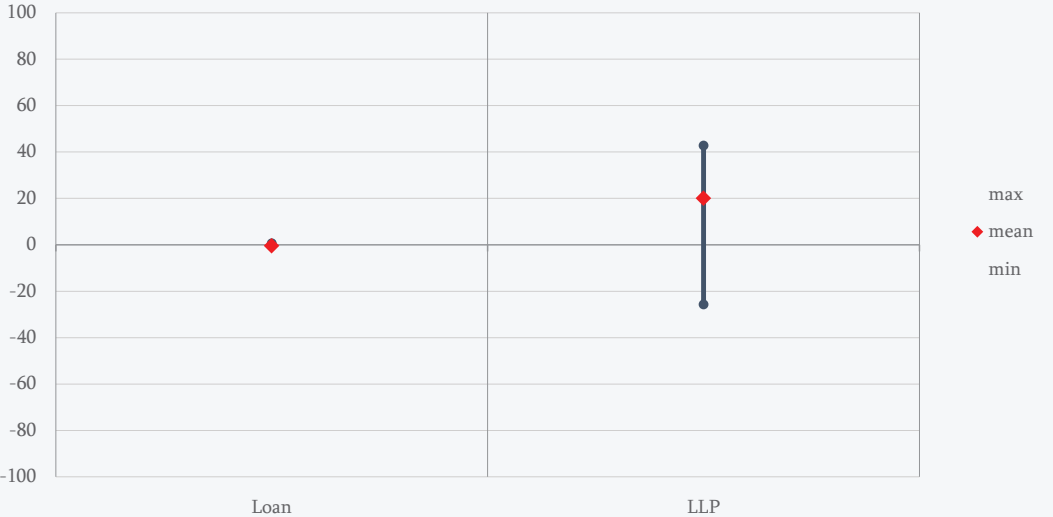
The overall effect of reclassification and remeasurement on provision, which is calculated as the percentage change from Loan Loss Provision (LLP) to ECL in January 1, 2018, ranged between -25.7 to 42.8 percent across the banks. On average, loan provision increased across the banking system by 20.5 percent. Percentage change in total loans as a result of remeasurement and reclassification was negligible, ranging between -1.28 and 0.71 percent. The overall effect of transition from IAS 39 to IFRS 9 on loans and loan provision is presented in Figure B11.

Figure B10. Loan structure by Categorization, 2018



Source: NBG.

Figure B11. Change in loan exposure classification and the corresponding provisions due to the introduction of IFRS 9, 2018



Source: NBG.

IV. Financial Stability Policy Measures and Recommendations

The NBG maintains financial stability and supports the sound operation of the financial system in Georgia. With this central aim in mind, a number of macroprudential policy measures have been implemented over the past year. In order to mitigate excessive credit growth and address concerns about the debt-servicing capacities of households, the NBG has introduced the Loan to Value (LTV) and Payment to Income (PTI) limits, while leaving the countercyclical capital buffer⁴⁵ unchanged. The NBG has also continued its efforts to reduce the structural risks to the financial system arising from a high level of dollarization. The limits on LTV and PTI, the reserve requirements and the LCR requirements are each differentiated according to local and foreign currencies. In order to further strengthen the resilience of individual institutions and the banking sector as a whole, the NBG has continuously employed a combination of micro and macroprudential measures. All banks are required to supplement the minimum capital requirements with conservation and Pillar 2 buffers, while three systematically important financial institutions are also subject to systemic buffer requirements. The NBG's macroprudential efforts have also been assisted by the government's actions to cap effective interest rates and restrict access to foreign currency denominated loans.

In order to make macroprudential policy operational, transparent and accountable, the NBG has developed the Macroprudential Policy Strategy. Within the strategy, the NBG has identified intermediate objectives that include the mitigation and prevention of excessive credit growth and leverage, managing excessive maturity mismatch and market illiquidity, limiting direct and indirect exposure concentrations, reducing financial dollarization, and limiting the systemic impact of misaligned incentives. Details about these intermediate objectives, along with the corresponding indicators and macroprudential instruments are provided in the Macroprudential Policy Strategy⁴⁶ for Georgia, which is available on the NBG's website.

In order to mitigate excessive credit growth and address concerns regarding the debt-servicing capacities of households, the NBG introduced LTV and PTI limits. An analysis of credit growth indicated that a significant share of the increase was due to loans being issued to natural persons. In response, the NBG introduced a regulation on responsible lending to natural persons that aims to facilitate sound lending, which in turn contributes to financial stability and the sustainable development of the economy. According to the main principle of the regulation, a financial institution cannot issue a loan or impose any other financial liability on a consumer (e.g. a guarantee) without first un-

dertaking a proper analysis of the borrower's ability to repay the debt. In addition, the PTI and LTV ratios cannot exceed the corresponding maximum norms (see Table 3). The LTV limits restrict the size of mortgage loans relative to the value of real estate used as collateral, while the PTI limits restrict the size of debt service payments by households to a fixed share of their income. The lending requirements such as the limits on LTV and PTI stabilize the credit market in the long term, support discipline and generally help keep credit growth under control. Early evidence suggests that these measures have helped moderate the increase in households' indebtedness.

Based on the overall assessment of credit growth and the impact of the responsible lending regulations, the Financial Stability Committee (FSC) does not deem it necessary to change countercyclical capital buffer. The FSC set the countercyclical capital buffer at 0 percent at the end of 2017 and it has remained at that level since then. According to the committee's assessment, total credit growth remained in line with nominal GDP growth throughout the first half of 2018. Although overall credit growth in the second half of 2018 suggested that there might be some merit in activating the countercyclical capital buffer, the FSC opted to keep it unchanged. This decision was made based on the expected impact of the responsible lending framework regulations,⁴⁷ such as the limits on LTV and PTI coefficients that should cause credit growth to return to a sustainable level.

45 The countercyclical capital buffer is one of the most important macroprudential policy instruments. Its goal is to protect the banking sector from systemic risks arising from excessive credit growth.

46 <https://www.nbg.gov.ge/index.php?m=738&lng=eng>

47 The regulation on responsible lending to natural persons has been enacted starting from January 1, 2019. https://www.nbg.gov.ge/uploads/01/281_.PDF

In addition to the use of a countercyclical capital buffer, the NBG employs leverage ratio requirements to restrict the build-up of excessive leverage in the banking sector. In September 2018, the NBG approved the Regulation on Leverage Ratio Requirements for Commercial Banks.⁴⁸ The leverage ratio is a simple coefficient, which is a supplementary measure to the existing risk-based capital requirements. It is defined based on the framework of the Basel Committee of Banking Supervision. The Basel III leverage ratio minimum requirement is set at 3 percent, while according to Georgian regulations, banks must meet a minimum leverage ratio requirement of 5 percent. It should be noted that commercial banks in Georgia tend to maintain leverage ratios much higher than required by the regulation. The consolidated level of the leverage ratio across all banks was 11.8 percent as of 31 December 2018.

The NBG has also continued its efforts to reduce the structural risks to the financial system arising from the high level of dollarization. In order to tackle this, a number of macroprudential measures have been employed. Liquidity requirements, such as the liquidity coverage ratio (LCR), have been set differently for domestic and foreign currency. The reserve requirements also vary according to currency. In addition, the norms introduced within the responsible lending regulations are differentiated according to domestic and foreign currency denominated loans. It should also be noted that banks are required to maintain an additional capital buffer for currency-induced credit risk. The resilience of the banking sector towards foreign interest rate risk is also assessed on a micro level. The analysis indicates that the commercial banks remain resilient. On top of all of these prudential measures, the NBG has been recommending that financial institutions take proper account of foreign currency-related interest rate risk in their FC loan pricing. The NBG has also been recommending financial institutions to take proper account of the risk of exchange rate fluctuations in loan pricing.

The NBG's macroprudential efforts have been assisted by the government's actions. The amendment to the Civil Code,⁴⁹ according to which, loans below 200 000 GEL are to only be issued in the local currency, will help protect households against foreign currency risks and will also support de-dollarization of the financial system. The maximum effective interest rate on loans has been set at 50 percent. The

latter aims to further cut down the number of high-risk products on the market. The capital and liquidity requirements apply to both bank and non-bank lending institutions. The decree on responsible lending applies to all financial institutions under the supervision of the National Bank. Besides commercial banks, these organizations include non-bank depository institutions, credit unions, microfinance organizations and any entity towards which 20 or more people (including individual entrepreneurs) have loan obligations. Similar to commercial banks, the non-banking sector is required to assess a borrower's income and the value of collateral and to comply with the LTV/PTI limits. Moreover, with the approval of the Regulation on Supervision and Regulation of Microfinance Organization Activities⁵⁰ in July 2018, regulatory capital and liquidity requirements have been set for microfinance institutions.

In order to mitigate excessive maturity mismatch and ensure market liquidity, the NBG employs a combination of macroprudential and microprudential measures. Starting from September 2019, the NBG has introduced the Net Stable Funding Ratio (NSFR). This ratio fosters longer-term stability by incentivizing banks to fund long-term assets with long-term liabilities and, by so doing, to better manage maturity mismatches. The NSFR aims to ensure that banks have enough stable funding in place to support their lending activities. It also helps to limit credit cycle volatility. The solid liquidity position of the banking sector was ensured by setting the Liquidity Coverage Ratio (LCR) requirement in September 2017. It should be noted that financial institutions tend to maintain liquidity buffers on top of the minimum requirements.

Efforts to strengthen the resilience of the financial system are a continuous work-in-progress. All banks are required to supplement the minimum capital requirements with a conservation buffer, while an additional capital buffer has been set for the three banks that the NBG considers to be systematically important. Financial difficulties in systematically important banks can pose a significant threat to the country's financial stability. The goal of systemic buffers is to increase the resilience of such systematically important financial institutions, and thereby help ensure the stability of the system as a whole. Based on the recommendations of Basel Committee on Banking Supervision's and the European Banking Authority's (EBA) methodology, the NBG has identified three systematically important banks that have been required to

48 https://www.nbg.gov.ge/uploads/legalacts/fts_eng/214_04_eng.pdf

49 <https://matsne.gov.ge/ka/document/view/4439928?publication=0>

50 https://www.nbg.gov.ge/uploads/legalacts/nonbanking/legal_acts/eng/order_14304_of_5_july_2018.pdf

maintain a non-zero buffer since 31 December, 2017. The systemic buffers are expressed as a percentage of risk-weighted assets and it is planned to gradually increase these, reaching rates ranging between 1.5 and 2.5 percent by 31 December 2021.

The NBG employs Pillar 2 capital buffer requirements to limit direct and indirect exposure concentrations, while the net General Risk Assessment Program (GRAPE) buffer is used to mitigate the systemic impact of misaligned in-

centives. On top of the combination of capital buffers, banks in Georgia are subject to Pillar 2 capital buffer requirements that include the unhedged currency induced credit risk buffer; the credit portfolio concentration buffer, which entails name and sectoral concentration buffers; the net stress test buffer, which is set in accordance with the stress tests administered by the NBG; and the net GRAPE buffer. More details on the Pillar 2 capital buffer requirements as of 31 December 2018 are given in Table 3.

Table 3. The Macroprudential Measures of the NBG

Instrument	Rate	From
Countercyclical capital buffer	0%	18.12.2017
Systemic buffers JSC "TBC Bank" JSC "Bank of Georgia" JSC "Liberty Bank"	1.5% 1.5% 0.9%	31.12.2019
Conservation buffer	2.5%	2017
Pillar 2 buffers CET1 Pillar 2 requirements Consolidated Range Tier 1 Pillar 2 requirements Consolidated Range Regulatory capital Pillar 2 requirements Consolidated Range	1.7% 0.7% - 3.1% 2.3% 1.0% - 4.1% 5.5% 2.8% - 19.1%	As of 31.12.2018 As of 31.12.2018 As of 31.12.2018 As of 31.12.2018 As of 31.12.2018 As of 31.12.2018
Total capital and buffer requirements Of which, Common Equity Tier 1 (CET1) requirements	13.3% - 29.6% 7.7% - 10.1%	As of 31.12.2018
Leverage ratio	5%	26.09.2018
Payment-to-Income limit (PTI) For unhedged borrower in case of maximum/ contractual maturity For hedged borrowers in case of maximum/ con- tractual maturity	20%/25% -30%/35% 25%/35% - 50%/60%	01.01.2019 01.01.2019
Loan-to-Value limit (LTV) for GEL loans for foreign currency loans	85% 70%	01.01.2019 01.01.2019
Liquidity Coverage Ratio (LCR) requirements in All currencies (Cumulative) GEL Foreign currency	100% 75% 100%	01.09.2017 01.09.2017 01.09.2017
Net Stable Funding Ratio (NSFR)	100%	01.09.2019
Limits on open foreign exchange positions	20% of regulatory capital	20.07.2006
Reserve requirements for National currency for liabilities with the remaining maturity up to one year Foreign currency for liabilities with the remaining maturity up to one year for liabilities with the remaining maturity between 1-2 years	5% 30% 15%	26.07.2018 16.05.2019 16.05.2019

Abbreviations

BCBS	Basel Committee on Banking Supervision
CA	Current Account
CAR	Capital Adequacy Ratio
CBOE	Chicago Board Options Exchange
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
EAD	Exposure at Default
EBA	European Banking Authority
EBITDA	Earnings before interest, taxes, depreciation and amortization
ECB	European Central Bank
ECL	Expected Credit Loss
EU	European Union
GaR	Growth-at-Risk
GEL	Georgian Lari
GRAPE	General Risk Assessment Program
FC	Foreign Currency
FDI	Foreign Direct Investment
FED	Federal Reserve
FSAP	Financial Sector Assessment Program
FSC	Financial Stability Committee
FSR	Financial Stability Report
FX	Foreign Exchange
IAS	International Accounting System
ICR	Interest Coverage Ratio
IFSR	International Financial Reporting Standards
IMF	International Monetary Fund
LC	Local Currency
LCR	Liquidity Coverage Ratio
LDA	Linear Discriminant Analysis
LGD	Loss Given Default
LIBOR	London Inter-bank Offered Rate
LLP	Loan Loss Provision
LTV	Loan-to-Value
NBG	National Bank of Georgia
NEER	Nominal Effective Exchange Rate
NIIP	Net International Investment Position
NSFR	Net Stable Funding Ratio
NPL	Non-Performing Loans
PD	Probability of Default
PP	Percentage Point

PTI	Payment-to-Income
ROE	Return on Equity
SARAS	Service for Accounting, Reporting and Auditing Supervision
SME	Small and medium-sized enterprises
USD	U.S. dollar
VIX	Volatility Index
WEO	World Economic Organization
YoY	Year on Year



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