



# GEORGIA

## FINANCIAL SECTOR ASSESSMENT PROGRAM

### TECHNICAL NOTE—MACROPRUDENTIAL POLICIES AND DE-DOLLARIZATION

September 2021

This paper on Georgia was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on September 17, 2021.

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September 17, 2021

## TECHNICAL NOTE

MACROPRUDENTIAL POLICIES AND DE-DOLLARIZATION

Prepared By  
**Monetary and Capital Markets  
Department**

This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program (FSAP) in Georgia. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP can be found at <http://www.imf.org/external/np/fsap/fssa.aspx>

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## Glossary

CCyB	Countercyclical capital buffer
ESRB	European Systemic Risk Board
FSC	Financial Stability Committee
FSR	Financial Stability Report
ISDA	International Swaps and Derivatives Association
LCR	Liquidity coverage ratio
LTV	Loan-to-value
MoF	Ministry of Finance
MoU	Memorandum of Understanding
NBG	National Bank of Georgia
NSFR	Net stable funding ratio
PTI	Payment-to-income

## EXECUTIVE SUMMARY<sup>1</sup>

**Since the 2015 FSAP, the NBG has significantly strengthened its institutional framework for macroprudential policy and put in place a comprehensive toolkit.** Among other reforms, to strengthen the transparency of and accountability for macroprudential policy, the NBG published its Macroprudential Policy Strategy in 2019, which sets out five intermediate objectives: (i) mitigating and preventing excessive credit growth and leverage; (ii) mitigating and preventing excessive maturity mismatch and market illiquidity; (iii) limiting direct and indirect exposure concentrations; (iv) limiting the systemic impact of misaligned incentives with a view to reducing moral hazard; and (v) reducing dollarization of the financial system.

**The institutional framework for macroprudential policy in Georgia meets the broad principles of good design.** It places all macroprudential powers within the NBG pursuing its financial stability objective, which is enshrined in the Organic Law on the NBG, thereby ensuring the ability to act. Multiple measures put in place in recent years have convincingly shown that the authorities have both the willingness and ability to act. There is scope for further improvements to the framework to strengthen communication, impact analysis, and perception of accountability.

**Strengthened communication and analysis on the rationale and impact of macroprudential policy decisions should help enhance their acceptance by stakeholders.** Communication could be strengthened by publishing NBG's heatmap assessments of systemic financial stability risks, publishing policy papers outlining the approach to calibrating macroprudential policy instruments, and increasing outreach not only to the financial sector but also to large corporate entities, whose business models can be significantly affected by macroprudential policy decisions.

**Financial dollarization poses the most important risk to the banking system in Georgia and limits the ability of the economy to adjust to shocks, outweighing the role of other potential risks.** Dollarization increases risks to the banking system via two distinct channels: (i) credit risk from unhedged borrowers, and (ii) liquidity risk. Furthermore, revaluation effects of the bank balance sheet and indirect risk from interest rate volatility transmit exchange rate fluctuation to the banking system. High dollarization also limits the interest rate channel of monetary policy and strengthens the exchange rate channel, which may be less expansionary in a highly dollarized economy. Reducing dollarization of the financial system is one of the objectives of the NBG's macroprudential policy strategy, because of the challenges it poses for macro-economic and financial stability.

**The NBG has introduced a comprehensive toolkit for prudential regulation to limit financial stability risks stemming from dollarization and to reduce the level of dollarization itself.** As in many highly dollarized economies, dollarization in Georgia stems from a history of macrofinancial instability, hyperinflation, and large exchange rate depreciation in the nineties, which weakened

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<sup>1</sup> This note was prepared by Sergejs Saksonovs and Julia Faltermeier (all IMF). The analysis has benefitted from discussions with the staff of the National Bank of Georgia and reviewers at the IMF.

public confidence in the domestic currency and led households to prefer holding dollars as a safe store of value. The NBG complemented initial measures of differentiated reserve requirements and capital buffers against currency-induced credit risk by borrower-based measures in 2019. These consist of limits on debt-service (or payment) to income (PTI) and loan-to-value (LTV) ratios as well as a minimum loan size of 200,000 GEL for FX loans (raised from 100,000 GEL limit introduced in 2017) and have reduced availability of FX loans to potentially vulnerable borrowers. In addition, the gradual tightening of FX reserve requirements and differentiation of the liquidity coverage ratio (LCR) by currency have limited liquidity risks. As a result, loan dollarization has declined by around 10 percentage points since 2016. Nevertheless, dollarization remains well above the cross-country benchmark. NBG measures have also increased interest differentials between lari and USD deposits, making USD deposits less attractive. However, deposit dollarization remains higher than loan dollarization.

**The NBG should continue to monitor financial vulnerabilities from dollarization and review the calibration and implementation of the toolkit to further limit risks and encourage**

**larization.** Further progress on de-dollarization will take time, especially for deposit-driven dollarization. Cross-country experience provides some guidance on the key elements of a successful strategy, which should include sound and sustainable macroeconomic policies, fiscal discipline, and credible institutions. In many countries, progress on deposit de-dollarization was faster in periods of fiscal consolidation and with a temporary stable or appreciating exchange rate. Over the medium term, the authorities should consider tightening dollarization measures gradually, with the choice of measures and calibration informed by impact assessments. Market-based measures are generally better suited to avoid inefficiencies in the allocation of credit while borrower-based measures can better target vulnerabilities but rely on additional data, which may be difficult to obtain. Outright restrictions, such as an increase in the 200,000 GEL limit, have higher efficiency costs but are easier to communicate and implement.

**Macroprudential measures need to form part of a comprehensive de-dollarization strategy.**

The success of the strategy will depend on how these macroprudential measures are complemented by other measures to strengthen trust in the local currency and build a track record of low and stable inflation to reduce deposit dollarization. In particular, the NBG should seek to strengthen public perception of two-way exchange rate flexibility by publishing its FX intervention strategy to show that there is no conflict between the objective of reserve accumulation and exchange rate flexibility. Finally, the Ministry of Finance can support local capital market development by regularly issuing benchmark local currency bonds, increasing the share of local currency debt in overall public debt, and supporting the development of covered bonds.

**The NBG's comprehensive macroprudential measures have helped strengthen the resilience of the financial sector to the COVID-19 shock.**

Prior to the crisis, macroprudential tools were broadly effective in slowing down credit growth and achieving a more sustainable mix of lending. Even though the damage inflicted by the COVID-19 shock has been severe, the financial sector remained resilient and profitable. However, much of the toolkit is relatively new. The NBG is now appropriately focusing its attention on rebuilding buffers and refining the implementation of its tools rather than

seeking to further expand the toolkit. For example, the NBG has announced the timeline for restoring the CICR buffer requirement in line with the pace of recovery.<sup>2</sup>

**The quality of design and implementation of macroprudential policies will ultimately depend on the quality of available data.** The NBG should continue to strengthen and refine data collection procedures to improve the basis for macroprudential policy decisions. One particularly helpful step is the planned implementation of a credit registry with detailed data on loans, including interest rates, and borrower information such as income. Over time, this will provide the NBG more granular data to be used for assessment of risks and calibration of macroprudential tools.

**The NBG should review the parameterization and calibration of PTI and LTV ratio limits periodically.** PTIs and LTVs first introduced in 2019 were initially calibrated based on cross-country comparison and ex-ante correlation between PTI/LTV ratios and loan default rates, and subsequently recalibrated in early 2020. The current calibration of the PTI measure implies that the income of borrowers is stressed for significant exchange rate depreciation. However, as the NBG collects more data on the income and debt of borrowers, it will be able to reassess the parameterization and calibration thresholds for PTIs, and potentially going beyond the impact of exchange rate depreciation to consider other types of shocks to borrowers' income or debt payments.

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<sup>2</sup> On June 16, 2021, the NBG announced the restoration of capital buffers starting on January 1, 2022, over a two-year period. Banks will be required to restore the CICR buffer by January 1, 2023, and the capital conservation buffer by January 1, 2024.

**Table 1. Georgia: Summary of Key Recommendations**

<b>Recommendations</b>		<b>Authority</b>	<b>Timing<sup>1</sup></b>
<b>Institutional Framework for Macroprudential Policy</b>			
1.	Continue to strengthen public communication on the rationale for macroprudential policy decisions and their impact.	NBG	ST
2.	Expand impact assessments and cost-benefit analyses of macroprudential policy measures, including for de-dollarization, and carry these out more regularly.	NBG	ST
3.	Ensure that the NBG Board is usually fully staffed to strengthen perception of accountability.	Parliament, NBG	I
<b>Implementation of Macroprudential Policy Tools</b>			
4.	Continue to expand and refine data collection to improve the basis for macroprudential policy decisions, including on borrowers' income and on the terms of their debt.	NBG, MoF	ST
5.	Review the parameterization and calibration of PTI and LTV ratio limits periodically as available data on borrowers expands.	NBG	ST
<b>De-dollarization</b>			
6.	Gradually continue to tighten de-dollarization measures, with the choice of measures and calibration informed by impact assessments and cost-benefit analysis.	NBG	ST
7.	Enhance public communication to clarify the objectives of foreign exchange interventions.	NBG	ST
8.	Support deepening of FX markets, including by further development of IT infrastructure for FX trading	NBG	MT
9.	Continue to develop domestic capital markets by increasing the share of local currency debt, issuing benchmark bonds regularly, and developing covered bonds.	MoF	MT
10.	Measure and monitor potential leakages from macroprudential tools to entities outside of the NBG's perimeter of regulatory coverage and stand ready to act.	NBG, MoF	ST
<sup>1</sup> Timing: I—Immediate: within 1 year; ST—short term: 1 to 3 years; MT—medium term: 3–5 years			



# INSTITUTIONAL FRAMEWORK FOR MACROPRUDENTIAL POLICY

## A. Willingness to Act

**1. The Institutional framework for macroprudential policy has been strengthened since the 2015 FSAP.** The notion of “macroprudential policy” is not specified in the Organic Law on the NBG explicitly<sup>3</sup>, however, the mandate for macroprudential policy is rooted in the NBG’s objective to ensure the stability of the financial system, which is enshrined in the Organic law. Thus, the NBG is effectively the macroprudential policy authority in Georgia. The Organic Law grants the Governor of the NBG the power to set up advisory committees at the central bank level and, following previous assessments, the NBG created a dedicated financial stability committee to deal with macroprudential policy matters (IMF, 2015). In 2017, the NBG revamped the composition and mandate of the Financial Stability Committee (FSC) to make recommendations on the use of key macroprudential policy instruments. The lack of a specific enumeration of macroprudential policy responsibilities in the Organic law has not been an obstacle to putting in place a comprehensive macroprudential policy toolkit in line with the recommendations of the 2015 FSAP (see below).

**2. Macroprudential policy decisions are made by the Governor of the NBG based on recommendations of the FSC.** A dedicated financial stability department (with a staff of 9 people) is responsible for formulating and analyzing macroprudential policy proposals to be put on the agenda for the discussion at the FSC. The FSC has seventeen ex officio members (Governor and his deputies, as well as heads of most departments and divisions), is chaired by the Governor, and meets quarterly (with the option of extraordinary meetings at the discretion of the Governor). It can include other members upon the invitation by the Governor. The NBG keeps minutes of the FSC meetings, recording the opinions expressed by each member as well as the reasons for a specific decision taken. The minutes are not published, and FSC’s decisions are a recommendation to the Governor. Macroprudential policy decisions become legal acts based on the final decision of the Governor.

**3. A published macroprudential policy strategy ensures willingness to act.** In 2019, the FSC approved the Macroprudential Policy Strategy for Georgia, which sets out five intermediate objectives. Four of the objectives are based on the objectives suggested as critical in ESRB (2013) recommendation<sup>4</sup>: (i) mitigating and preventing excessive credit growth and leverage, (ii) mitigating and preventing excessive maturity mismatch and market illiquidity, (iii) limiting direct and indirect exposure concentrations, and (iv) limiting the systemic impact of misaligned incentives with a view

<sup>3</sup> ESRB (2011) recommends that “member states designate *in the national legislation* an authority entrusted with the conduct of macro-prudential policy”, and “entrust the macro-prudential authority as a minimum with the tasks of identifying, monitoring and assessing risks to financial stability and of implementing policies to achieve its objective by preventing and mitigating those risks”, a recommendation also echoed in IMF (2015).

<sup>4</sup> One additional recommended objective, which has not been adopted by the NBG, is to strengthen the resilience of financial infrastructures.

to reducing moral hazard. The fifth objective is specific to Georgia – reducing dollarization of the financial system. The intermediate objectives, along with the rest of the strategy, are subject to regular review by the NBG.

**4. Accountability for macroprudential policies is enhanced by the regular publication of the financial stability report (FSR) and recommendations of the FSC.** Regular publication of the FSR resumed in 2019.<sup>5</sup> The report is now published annually usually around September. 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 important for financial stability. It also analyses the resilience of the domestic financial system and reviews the policies and measures undertaken by the Governor as recommended by the FSC to support financial stability (NBG, 2020). Recommendations of the FSC have been published quarterly since March 2018. This publication usually includes a couple of pages including the latest decisions on e.g. CCyB and credit growth dynamics.

**5. Vacancies on the NBG’s Governing Board are being filled, which should strengthen accountability.** The Organic Law has been amended in 2020 to expand the Board of the National Bank (the supreme body of the NBG) from seven to nine positions (four executive and five nonexecutive). The terms of two non-executive members expired in 2019 and these vacancies have only been nominated recently, which should help ensure that non-executive members comprise the majority on the Board and is a welcome step towards strengthening accountability.

## B. Ability to Act

**6. The NBG has implemented all the recommendations of the last FSAP that dealt with macroprudential policy tools.** These included putting in place elements of the Basel III framework (CCyB, LCR, capital surcharges for systemic banks). The momentum for strengthening the macroprudential policy toolkit accelerated in 2016 when a new government with a bigger Parliamentary majority came to power and a new Governor of the NBG was appointed.

**7. Since 2016 the NBG has put in place a comprehensive toolkit to achieve the intermediate objectives of macroprudential policy.** The toolkit (see Table 2) includes: (i) broad-based tools such as the counter-cyclical capital buffer (CCyB), which has been set at zero since its introduction in December 2017, and the leverage ratio set at 5 percent since its introduction in September 2018, (ii) borrower-based tools - loan-to-value and payment-to-income ratios (introduced in 2019), which are differentiated based on the currency of the loan, (iii) liquidity tools – LCR (lower for GEL compared to FX liabilities) and NSFR (introduced in 2017 and 2019 respectively) and (iv) structural tools – additional capital buffers for domestic systemically important banks.

<sup>5</sup> Previously FSR was published from 2006 to 2011.

**Table 2. Georgia: Macroprudential Measures of the NBG**

<b>Instruments</b>	<b>Details</b>	<b>Implementation Date</b>
<b>Capital Measures</b>		
Regulatory Capital Thresholds	Increase in minimum regulatory capital for banks to GEL 50 million.	May 2017
Capital Ratios	Alignment of capital ratios with Basel III and introduction of Pillar 2 Capital Requirements	December 2017
Capital Conservation Buffer	- CCB (2.5 percent) introduced as part of the Basel III implementation	December 2017
	- CCB released as part of COVID-19 response to be restored by Jan. 2024	April 2020
Unhedged Currency Induced Credit Risk Buffer	- Pillar 2 buffer equivalent to 75 percent additional risk weighting for currency-induced credit risk exposure	December 2017
	- Two-thirds of this buffer was released as part of the NBG response to Covid-19, to be restored by January 2023	April 2020
Countercyclical Buffer	CCyB introduced but not activated	December 2017
Systemic Buffer	DSIB Buffers (between 1.5 and 2.5 percent) introduced for three identified DSIBs to be phased in gradually through December 2021.	December 2019
Leverage Ratio	Minimum requirement of 5 percent	September 2018
Capital Distributions	As part of response to Covid-19, the NBG prohibited use of relief on capital requirements for dividend payouts, share buybacks, equity investments, increases in variable remuneration for management, or other types of distributions and payments.	April 2020
<b>Liquidity-related Measures</b>		
Reserve Requirements	<u>Short-term FX Deposits, remunerated at Fed Funds rate minus 50 bp or ECB deposit facility minus 20 bp</u> - Increase in reserve requirement from 20 to 25 percent. - Further increase from 25 to 30 percent. - Reduction from 30 to 25 percent. - Differentiation by bank: 1 ppt reduction for every 2 ppt below 70 percent of deposit dollarization until 40 percent.	July 2018 March 2019 October 2019 July 2021
	<u>Lari Deposits, remunerated at policy rate</u> - Reduction of reserve requirements from 7 to 5 percent.	July 2018

<b>Table 2. Georgia: Macroprudential Measures of the NBG (concluded)</b>		
<b>Instruments</b>	<b>- Details</b>	<b>Implementation Date</b>
LCR	- LCR of 100 percent (overall), 75 percent (domestic currency), and 100 percent (foreign currency)	September 2017
	- LCR in domestic currency reduced to zero for one year	May 2020
	- Removal of the 25 percent haircut previously applied to FX required reserves in the calculation of high-quality liquid assets as part of FX liquidity coverage ratio	October 2019
NSFR	Net Stable Funding Ratio requirement of 100 percent	September 2019
<b>Borrower-based Measures</b>		
Payment-to-Income Limit	Unhedged Borrowers: 20 – 35 percent	January 2019
	Hedged Borrowers: 25 – 60 percent	March 2020
Loan-to-Value Limit	Unhedged Borrowers: 20 – 30 percent	
	Hedged Borrowers: 25 – 50 percent	
Restriction on FX lending	GEL Loans: 85 percent	January 2019
	Foreign Currency Loans: 70 percent	
Restriction on FX lending	- Issuance of FX loans below 100,000 GEL prohibited	January 2017
	- Limit tightened to 200,000 GEL	January 2019
<b>Currency-risk Measures</b>		
Limit on net open FX position	20 percent of regulatory capital	July 2006

**8. The NBG has sufficient powers to implement macroprudential policy.** The organic law grants the NBG supervision powers over the entire financial sector except for the insurance sector, which is very small. Therefore, the regulatory perimeter is quite broad helping limit leakages from macroprudential measures. Because the responsibility and the associated legal powers all fall with the NBG, there is little need to utilize “comply or explain” mechanisms or resort to issuing recommendations, for which there is no legal mechanism.

**9. The NBG provided a clear indication of its ability to act during the COVID-19 pandemic as it discussed and implemented several measures in April – May 2020.** There was no extraordinary formal meeting of the FSC during the crisis, but the NBG discussed several measures (relaxation of LCR requirement in local currency, release of some capital buffers) internally and with the financial sector and implemented them quickly.

## C. Cooperation

**10. The Organic Law on the NBG establishes an interagency committee for financial stability.** Its objective is to support the stable functioning of the financial system and develop mechanisms for crisis management (it was created primarily for bank resolution rather than macroprudential policy coordination). The committee includes representatives from the MoF, NBG, Deposit Guarantee Fund, and Insurance State Supervision Service. It convenes at least semi-annually at the request of the NBG. The Committee ensures sharing of information among participating agencies, joint analysis of systemic risk developments, the assessment of systemic risk scenarios, operational planning, and simulations for crisis preparedness and crisis management.

**11. The NBG also cooperates with the MoF and Parliament to improve legislation.** Some examples of this are the introduction of the minimum size for foreign currency loans of 200,000 GEL (equivalent to USD 63,000 as of June 2021) or a cap on the annual effective interest rate (at 50 percent). Both measures required changes in the Civil Code of Georgia. Cooperation is formalized by an MoU signed between MoF and NBG in 2014, obliging parties to share information regarding risks to financial stability and coordinating responses to those risks.

**12. The NBG actively seeks input from financial sector participants on macroprudential decisions.** Following the meetings of the FSC, the presentation containing the NBG's assessment of the most recent financial market developments, that is used by the FSC, is also delivered to market participants. The introduction of new tools and measures is discussed with the financial sector participants in advance (although the NBG is not required to do this) and their feedback is incorporated to the extent possible.

## D. Assessment and Recommendations

**13. The institutional framework for macroprudential policy has been strengthened since the last FSAP and meets the broad principles of good design.** IMF (2013) outlines the key considerations in the design of effective institutional frameworks, which include assuring willingness to act and fostering the ability to act in the face of evolving systemic threats. The Georgian framework places all macroprudential powers within the NBG pursuing its financial stability objective. The ability to act has been evident through the multiple measures put in place over the past years, which increased the ability of the financial sector to cope with the COVID-19 shock.

**14. The NBG should work with the Parliament to ensure that the remaining vacancies on the Board are filled.** A fully-staffed Board would provide more oversight of policy decisions and improve the perception of accountability over macroprudential (and other) policies among the key stakeholders (including the financial sector and the business community), which should help facilitate the acceptance of new macroprudential measures.

**15. The NBG should strengthen communication regarding macroprudential policy decisions, their impact, and rationale.** Much of the macroprudential policy framework is relatively new. Greater communication of the rationale for new tools and their expected impact on the

economy as a whole and different business models could facilitate acceptance by stakeholders. In turn, this would strengthen willingness to act by countering biases toward inaction, that arise when difficult decisions can be expected to encounter criticism. Although FSRs already provide a summary of key financial stability risks, they are published only annually, and the summary is of qualitative nature. On the other hand, quarterly statements by the FSC typically include only the data on credit dynamics. There are several ways NBG communications could be enhanced:

- The NBG could use heatmaps to signal its assessment of the level of risk as suggested by different indicators.<sup>6</sup> The Central Bank of Ireland, for example, publishes an annual Systemic Risk Pack, which includes such heatmaps.
- As the framework matures, the NBG could gradually publish more policy papers outlining its approaches to calibrating instruments such as the CCyB or PTI and LTV.<sup>7</sup> These policy papers could be supported by an analysis of the predictive power of various indicators enumerated in the Macroprudential Policy Strategy.<sup>8</sup>
- The NBG should seek to increase outreach not only to the financial sector but also to large corporate entities, whose business models can be significantly affected by macroprudential policy decisions (e.g. construction companies, large retailers, etc.).

**16. The NBG should regularly undertake impact assessments and cost-benefit analyses of macroprudential policy measures.** The NBG's Macroprudential Policy Strategy emphasizes monitoring the effects of interventions and evaluating the achievement of intermediate objectives. One notable example has been the NBG's ex-post assessment of the impact of responsible lending regulations in the 2019 annual report (NBS, 2019). This is important because the Georgian banking system is relatively concentrated with many smaller banks for whom compliance with strengthened regulations may be harder due to the necessary investments in IT, personnel, etc. Similar to greater communication, such evaluations could gradually increase acceptance by stakeholders. Buch et. al. (2018) argue that both *ex-ante* and *ex-post* evaluation of macroprudential policies, although difficult, are essential ingredients for a structured macroprudential policy process. The Reserve Bank of New Zealand, for example, in its macroprudential framework specifies the contents of the cost-benefit analysis and consultation over future macroprudential measures, which should cover *inter alia*: (i) impact of the proposal on the risk and severity of the crisis, (ii) efficiency costs of the policy in the

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<sup>6</sup> Such heat maps are typically mathematical summaries of multiple indicators. They have been used by central banks in Ireland, Mexico, and Norway. See e.g. Arbatli and Johansen (2017) for the description of the methodology.

<sup>7</sup> The Bank of England, for example, has published its approaches to setting CCyB and sectoral capital requirements along with the specific indicators used for this purpose at: <https://www.bankofengland.co.uk/financial-stability>

<sup>8</sup> See e.g. Drehmann and Juselius (2013), who find that credit to GDP gap and debt service ratio (defined as the proportion of interest payments and mandatory repayments of principals relative to income for the private non-financial sector as a whole) are the best performing indicators.

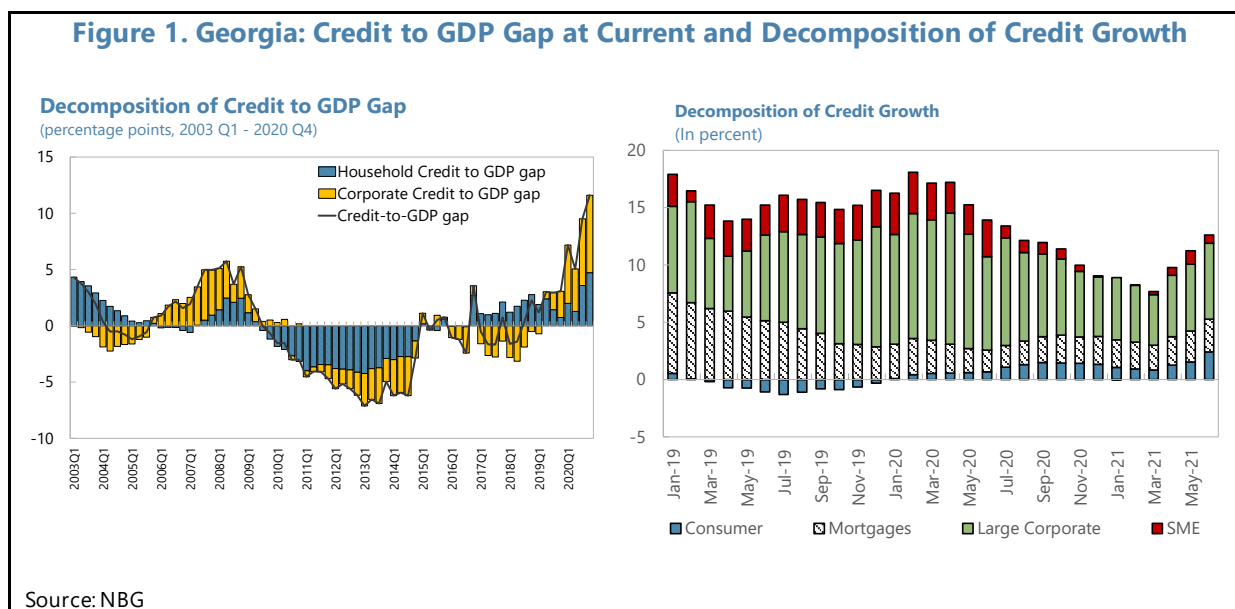
absence of a crisis, (iii) compliance costs for registered banks, and (iv) potential for unintended consequences.<sup>9</sup>

## IMPLEMENTATION OF MACROPRUDENTIAL TOOLS

### A. Broad-based Measures

**17. The NBG has implemented the countercyclical capital buffer and leverage ratio to control overall credit conditions and bank leverage.** The CCyB has been set at zero since December 2017 and the leverage ratio has been set at 5 percent (more conservative than the 3 percent minimum of the Basel III framework) since September 2018. The definitions of the instruments are aligned with the Basel III requirements. The introduction of both instruments is welcome as the leverage ratio can complement the CCyB by not relying on risk-weighted assets.

**18. Credit to GDP gap is one of the indicators considered by the NBG for activating or tightening CCyB, while recognizing its limitations in the Georgian context.** In line with the Basel framework (see BCBS (2010)), the NBG calculates credit to GDP gap as the deviation of the credit to GDP series from its trend computed using the Hodrick-Prescott filter.<sup>10</sup> This indicator is published quarterly alongside FSC decisions. However, it is affected by exchange rate fluctuations. The NBG has not utilized the broad based CCyB, choosing instead to target the build-up of household indebtedness via the introduction of PTIs and LTVs in 2019 and recognizing that the credit gap in 2020 reflected significant depreciation.



<sup>9</sup> See RBNZ Macprudential Policy Framework available at: <https://www.rbnz.govt.nz/regulation-and-supervision/banks/macro-prudential-policy>. Central Bank of Spain (2019) contains the ex-ante impact analysis of activating a CCyB.

<sup>10</sup> The sensitivity to short-term fluctuations  $\lambda$  is set to 400,000.

**19. The NBG therefore appropriately utilizes other measures to assess credit conditions.**

The other indicator that has been consistently published alongside FSC decisions has been credit growth at constant exchange rates.<sup>11</sup> This has been on a declining trend since reaching a peak of 21.5 percent (y/y) in April 2018 to its lowest value of 7.7 percent (y/y) in March 2021 before accelerating to 12.6 percent (y/y) in June 2021 (Figure 1). There has also been a gradual rebalancing of lending from households to legal entities, which was facilitated by the introduction of macroprudential measures targeting households.

## B. Sectoral Measures

**20. In 2019, the NBG introduced responsible lending regulations, which aimed to slow down lending to households.** This was motivated both by high growth rates of lending to households and the rising level of household indebtedness relative to peer countries.

**21. Responsible lending regulations entailed the introduction of PTI and LTV ratios, which slowed mortgage issuance and improved mortgage quality thus reducing financial vulnerabilities in this overly rapidly growing segment.** Maximum LTV ratios are set at 85 percent for lari denominated mortgages and 70 percent for mortgages denominated in FX.<sup>12</sup> PTIs are differentiated by income of the borrower as well as whether the borrower is hedged via having income in the same currency as the loan. Originally four income groups were defined, which were streamlined to two in 2020.<sup>13</sup> PTI requirements range between 20 and 50 percent depending on whether the borrowers' income is above or below GEL 1000.<sup>14</sup> The values for PTI and LTV ratios were set to levels broadly comparable to those of other countries, where these tools exist, as no sufficient data was available at the time to calibrate these to Georgian circumstances. As a result of these measures, as well as the tightening of the limit on FX loans (discussed below) newly issued mortgages (total of lari and FX denominated mortgages) declined by 4 percent (y/y) in 2019 compared to the average y/y growth of around 40 percent (y/y) in the previous three years. Relatively conservative mortgage loan underwriting contributed to the resilience of residential real estate prices in the aftermath of the COVID-19 and ensured that property repossessions remained relatively rare as borrowers could choose to sell the property and recover remaining equity in case of a decline in income (Figure 2).

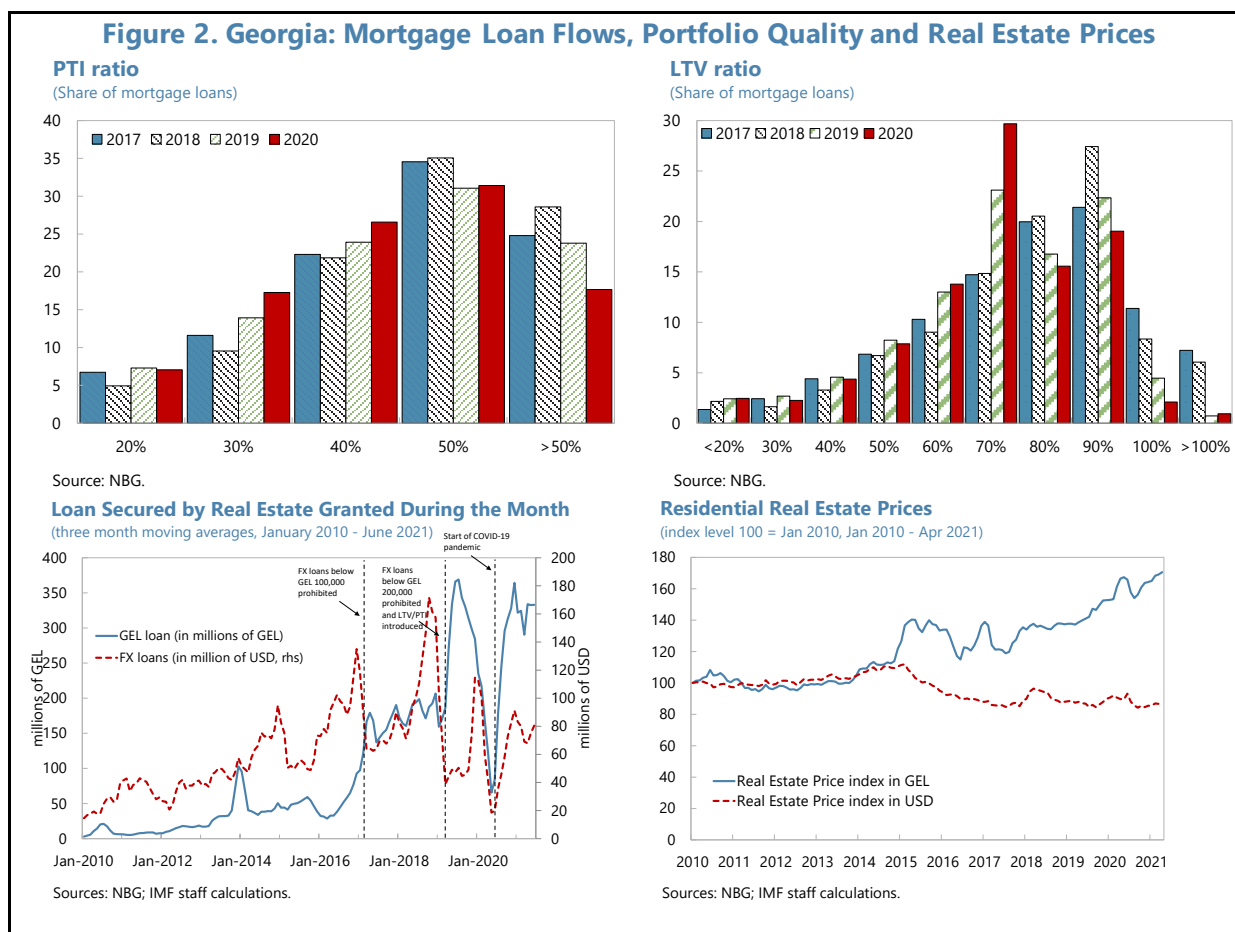
<sup>11</sup> This is defined in terms of exchange rates one year ago, e.g. when computing y/y credit growth at constant exchange rates in May 2021, FX denominated credit is valued at May 2020 exchange rates.

<sup>12</sup> The NBG originally tried to implement LTV and PTI ratios indirectly through requiring higher risk weights on loans that did not comply with the limits, but this did not slow down the issuance of such loans.

<sup>13</sup> Consolidation of the buckets resulted in marginal easing of PTI and LTV requirements.

<sup>14</sup> Note that PTI ratios apply not only to mortgages, but also to other loans such as for motor vehicles or general consumer loans. PTIs are calculated using maximum loan terms (15-20 years for mortgages, 10 for consumer loans backed by real estate, 6 for vehicles and 4 for other consumer loans).





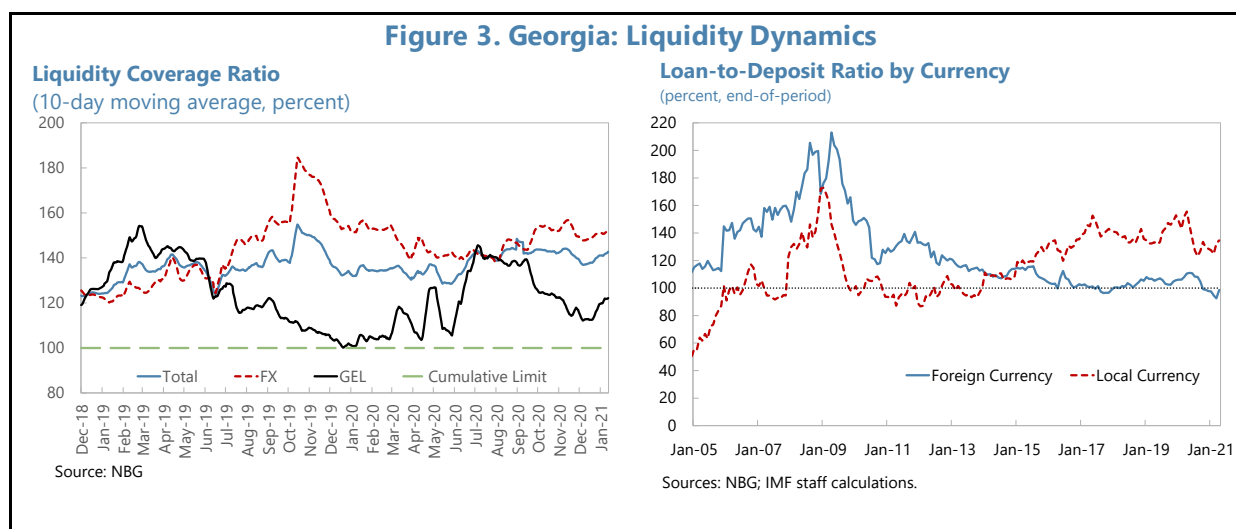
**22. Income verification has been a challenge in the implementation of PTI ratios.** Given the high degree of informality and self-employment in the economy, traditional methods (e.g. relying solely on tax returns) are not considered flexible enough for Georgia. The NBG estimates that more than 50 percent of borrowers underreport their income to the tax authority reflecting the large informal economy in Georgia. Thus, banks complement the information on income and its hedging status with other sources. The original version of the regulations required that banks verify borrower’s income using models and procedures pre-approved by the NBG. In 2020, the requirements were simplified so that banks could apply their own procedures so long as they satisfied the main principles defined in the revised regulation. These require, for example, that lenders use on-site visits and information about the average profit margins of businesses (for self-employed individuals).

**23. Data on borrowers’ loan exposure is collected by the credit bureau, but its information is incomplete.** The credit bureau is a private entity used by banks and other financial institutions to exchange information on the past credit record and current borrowing by individuals and firms. It helps banks to assess the credit risk stemming, for example, from existing loans in FX. However, the credit bureau does not contain information on interest rates or borrower income.

**24. The NBG has not introduced macroprudential tools targeting specifically the corporate sector.** Following the introduction of responsible lending regulations, credit growth has been driven by corporate borrowing. However, different from household debt prior to the introduction of responsible lending regulations, increases in corporate indebtedness were more modest. The corporate credit portfolio has become somewhat more diversified over the past decade. While the three largest sectors of corporate borrowers (industry, construction, and trade) accounted for about 80 percent of corporate loans in 2010, their share declined to around 60 percent in 2020 due to a rise in lending to the tourism sector (now accounting for around 10 percent of the portfolio) and real estate sales.

### C. Liquidity and Structural Measures

**25. The NBG implemented Basel III liquidity standards – the LCR and NSFR in 2017 and 2019 respectively.**<sup>15</sup> In addition, to the overall requirement of LCR of 100 percent, there are also differentiated requirements by currency (75 percent for lari and 100 percent for foreign exchange). Overall, liquidity has not been a major constraint for the banking system (Figure 3), though there were occasional episodes, where lari liquidity declined sharply (the most recent one associated with the outbreak of the COVID-19 pandemic). The NBG has put in place a number of measures to enhance the provision of lari liquidity including dedicated FX swap lines with commercial banks and microfinance institutions to exchange their foreign currency liquidity for domestic currency<sup>16</sup>, and accepting SME loan portfolio as collateral for repo operations until 2023. Loan to deposit ratios have remained broadly steady over the last couple of years. A higher loan to deposit ratio on domestic currency loans suggests that local currency funding remains a challenge but also that the growth in lari lending due to restrictions on FX lending has been accommodated by the market.



<sup>15</sup> These requirements modernized an earlier measure – the Higher Liquid Asset Requirement (HLAR). Both HLAR, as well as LCR and NSFR are classified as not only macroprudential measures but also capital flow measures as they are calibrated in a way that makes it costlier for banks to attract nonresident deposits.

<sup>16</sup> In April 2021, the NBG extended the stand-by FX swap instrument to operate until May 2022.

**26. In line with the Basel framework, the NBG designated three domestic systemically important banks, which face additional capital requirements.** Given the concentration of the Georgian banking system, two institutions qualify based on the size alone, while a third bank is considered systemic due to its extensive branch network. Systemic buffers were phased in gradually starting in 2017 and the phase-in is expected to be completed by 2021 (in spite of the COVID-19 shock) with the two largest banks having an additional buffer of 2.5 percent of risk-weighted assets and the third one having one of 1.5 percent.

#### D. Assessment and Recommendations

**27. The NBG now has a comprehensive macroprudential toolkit, which helped strengthen the resilience of the financial sector to the COVID-19 shock.** Prior to the crisis, the tools were broadly effective in slowing down credit growth and achieving a more sustainable mix of lending. Even though the damage inflicted by the COVID-19 shock was severe, the financial sector remained overall resilient. However, much of the toolkit is relatively new. The countercyclical capital buffer, for example, has never been activated before. PTI and LTV ratios were only introduced in 2019. The NBG is now appropriately focusing its attention on refining the implementation of the tools rather than seeking to expand the toolkit further.

**28. The NBG should continue to strengthen and refine data collection to improve the basis for macroprudential policy decisions.** The NBG regularly receives data on real estate transactions from the public registry and collaborates with the tax authority to obtain detailed income data on a one-off basis. Data collection could be strengthened by signing memorandums of understanding with the Georgian Revenue Service and the Public Registry to establish formal procedures for such data exchanges. Over the medium term such information could be used to consider the need for macroprudential instruments for corporate borrowers.

**29. The planned implementation of a credit registry will be another way to enhance data collection.** Currently, the NBG relies on banks' aggregate data submitted or collected for supervisory purposes. NBG plans to compile a credit registry with detailed data on loans, including interest rates (lacking in the current credit bureau data), and borrower information such as income. Over time, this will provide the NBG more granular data to be used for assessment of risks (e.g. climate) and calibration of macroprudential tools.

**30. The NBG should revisit the calibration of PTI and LTV ratio limits and consider moving to a stressed PTI measure as part of the recalibration.** The values of PTIs and LTVs that were introduced in 2019 and revised in 2020 were chosen based on cross-country comparisons and correlation between PTI/LTV ratios and loan default rates before the regulation. However, data on borrowers' income was limited and defaults (on mortgages) were infrequent in recent years. This makes it harder to assess to what extent PTI and LTV values were appropriate for Georgian macroeconomic circumstances. With income data now regularly collected and the recent experience of the COVID-19 crisis, the NBG will be in a better position to reassess which PTI thresholds in particular trigger the risk of loan deterioration and revisit the values if appropriate.

**31. The pros and cons of a stressed PTI measure that explicitly accounts for shocks could be considered as part of the broader recalibration.** In a stressed PTI, a uniform limit on the PTI ratio *after* a hypothetical shock is imposed at the moment of loan underwriting.<sup>17</sup> This re-calibrated PTI would take into account interest rate shocks in addition to the shocks to exchange rate and income taken into account by the current PTI.<sup>18</sup> Typically, such measures are used during a low interest rate environment to prepare for the eventual increase in interest rates (BIS, 2016). Even though interest rates on lari loans are relatively high, this measure may be relevant for Georgia given the volatility of domestic interest rates. Furthermore, it could be used to allow for risks stemming from exchange rate depreciation more explicitly. Currently, the same objective is achieved by having higher PTI limits on lari denominated loans compared to foreign currency denominated ones. In the context of the possible recalibration of these ratios, however, the NBG could consider whether stressed PTIs might be more forward-looking, flexible, and transparent (e.g. stressing domestic currency loans to higher interest rates and foreign currency ones to higher interest rates and depreciation).

## DE-DOLLARIZATION POLICIES

### A. Context

**32. Despite a gradual decline over the last decade, financial dollarization<sup>19</sup> in Georgia has remained persistently high.** Banks' assets and liabilities are widely denominated in foreign currency, mostly U.S. dollars, although the role of the euro has been increasing. Deposit dollarization hovers just above 60 percent, the highest in the Caucasus and Central Asia. Loan dollarization has declined a bit faster but is still at about 56 percent as of early 2021. Reducing dollarization of the financial system is one of the objectives of the Macroprudential Policy Strategy, because of the challenges it poses for macro-economic and financial stability (see subsection B).

**33. Reducing dollarization requires trust in the local currency and takes time.** Levy-Yeyati (2021), for example, shows that out of 21 countries with data for the period from 1999 to 2018, 16 reduced dollarization of term deposits with the average reduction of close to 20 percent over those twenty years.<sup>20</sup> In this context, Georgian progress can be seen as in line with international experience. As in many highly dollarized economies, dollarization in Georgia stems from a history of extreme instability, hyperinflation, and large exchange rate depreciation – the nineties – which led households to prefer holding dollars as a safe store of value. Over the last decade, Georgia has made remarkable progress in modernizing its monetary policy framework. Georgia introduced

<sup>17</sup> See e.g. IMF (2018) for an example of how a stressed DSTI measure was calibrated in Romania based on the kind of microdata that NBG is working to accumulate.

<sup>18</sup> For example, in Malta, a PTI of 40 percent is used after a 150 bps shock to interest rates.

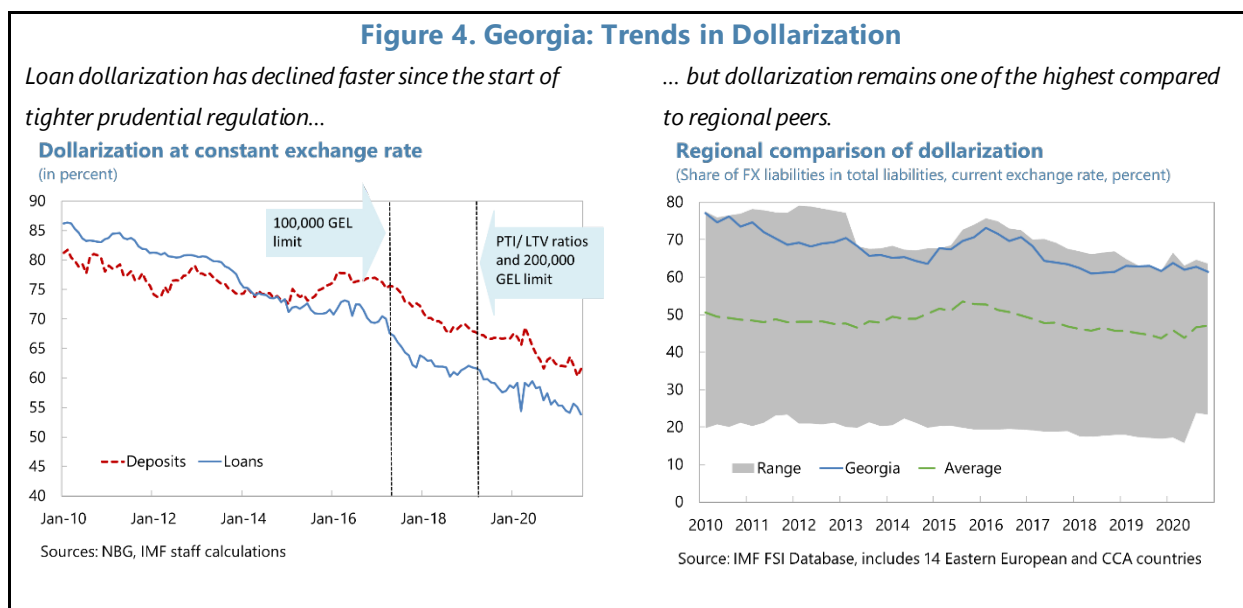
<sup>19</sup> This technical note focuses on financial dollarization defined as the denomination of assets and liabilities in foreign currency. In Georgia, the use of foreign currency as a means of payment is very limited.

<sup>20</sup> However, the sample only includes Latin American countries where the period of the greatest macroeconomic instability (the 1980s until the early 90s) slightly pre-dates the hyperinflation in Georgia, giving more time to re-establish trust in the currency.

inflation targeting in 2009 and inflation, although still high at times, has been lower and more stable. However, the country has been subjected to frequent external shocks (2014 oil price shock, geopolitical tensions in 2019, and COVID-19) and trust in local currency has been slow to build – partly hampered by the depreciating trend of the lari exchange rate against the USD – mostly in line with other regional currencies - over the last few years.

**34. The COVID-19 crisis has highlighted the contribution of macroprudential measures to the overall resilience of the economy, but it may delay progress on deposit de-dollarization.**

The lari has depreciated against the dollar following the COVID-19 shock. Although NPLs on foreign currency loans increased indeed more than for lari loans, households entered the crisis in better financial conditions than they would have without the prudential measures introduced in 2019 – especially due to lower loan issuance in foreign currency. However, although the substitution from lari into dollar deposits after the initial exchange rate depreciation in March 2020 was relatively contained, sustained lari depreciation has made saving in lari less attractive and slowed further de-dollarization of deposits.



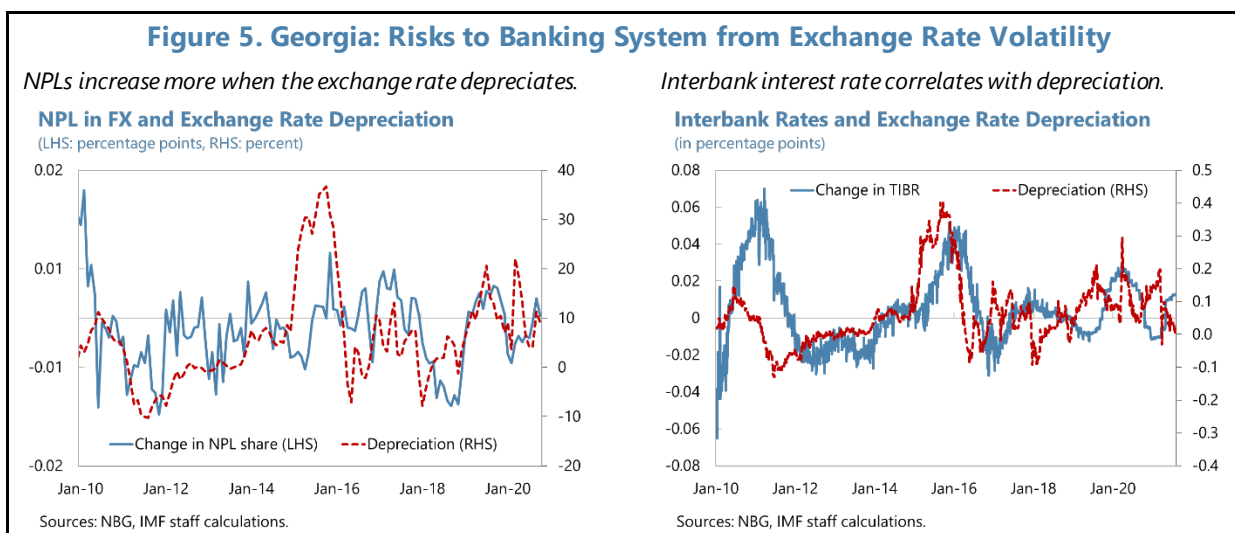
**35. The speed of the recovery will determine how quickly the de-dollarization agenda can advance.**

Macroprudential tools targeting dollarization have stayed in place during the COVID-19 crisis, apart from a temporary, partial release of the currency-induced credit risk buffer, avoiding a setback of the de-dollarization agenda. Instead, support measures such as the local currency mortgage subsidy have helped promote loan larization. However, still-high uncertainty about the speed of the recovery requires further measures to reduce loan or deposit dollarization to be mindful of potential adverse effects on access to and cost of credit. The recent change in the reserve requirement for example incentivizes larization by lowering costs to banks and thus avoids an additional burden to banks at a time of extreme stress.

## B. Costs of Dollarization

**36. High dollarization is the main source of systemic risk to the banking system in Georgia.** Risks to the banking system from exchange rate volatility stem from two main sources:

- Credit risk from unhedged borrowers:** The Georgian banks themselves target a closed net open foreign currency positions, limiting their exposure to exchange rate risk.<sup>21</sup> However, most borrowers of FX loans have no income streams matching their currency exposure – they are unhedged. The share of corporate borrowers able to fully hedge is estimated at only 21 percent and concentrated in a few sectors.<sup>22</sup> SMEs and households are generally unhedged, although some might be able to rely on remittance income. A large depreciation could quickly force these borrowers into default, also highlighted by the positive correlation between exchange rate depreciations and NPL rates.
- Liquidity risk:** The NBG has limited ability to backstop systemic liquidity shocks in foreign currency. Instead, banks depend on their own liquidity buffers to weather sudden outflows of FX deposits, their main source of funding. Recent years have not seen a buildup of liquidity risk. Non-resident deposits which tend to be more volatile, have stabilized at about 15 percent of total deposits since 2015. IFIs are another source of funding for banks that tends to be stable. Nevertheless, liquidity risks remain important, because concerns about the materialization of credit risk can also translate into a liquidity shock.



**37. In addition, valuation effects of the bank balance sheet and indirect risk from interest rate volatility transmit exchange rate fluctuation to the banking system.** Tier 1 capital in Georgia is held in lari. A depreciation of the currency increases the value of risk-weighted assets

<sup>21</sup> Georgian regulation requires banks to maintain a net open currency position not exceeding 20 percent of CET1. In practice, banks generally keep below that limit.

<sup>22</sup> The data is based on the classification used for the CICR buffer. Section D discusses the limitations of this classification in more detail.

(RWA), leading to a fall in the CAR and forcing banks to hold additional capital buffers to avoid breaching CAR regulations. Moreover, due to the high exchange rate pass-through to inflation, domestic interest rates tend to increase with depreciation. This may increase credit risk even for local currency lending if borrowers are unable to service loans with much higher monthly payments. Finally, the composition of FX lending has shifted more to EUR in the past years while FX deposits are in USD, exposing banks to interest rate risk in global financial markets.

### **Dollarization Limits Monetary Policy Transmission**

**38. High dollarization may limit the interest rate channel of monetary policy and strengthen the exchange rate channel.** If a large share of financial intermediation takes place in foreign currency, the central bank has less control over aggregate credit conditions through the domestic interest rate. Instead, the exchange rate becomes more sensitive to policy rate changes. A significant fall in the interest rate differential between domestic and FX-denominated deposits in response to monetary loosening could quickly lead to redenomination from local to foreign currency. This would lead the exchange rate to significantly depreciate.

**39. The exchange rate channel of monetary policy may be less expansionary in a highly dollarized economy.** Normally, the exchange rate acts as a buffer against external shocks. Through the trade balance- a depreciation makes exports more competitive and imports more expensive – the depreciation has an expansionary effect on GDP. However, in dollarized economies like Georgia, the balance sheet channel may significantly dampen the expansionary effect. A depreciation increases the debt burden denominated in foreign currency and debt servicing costs. Unhedged households and firms may be unable to repay their debt or obtain new credit, resulting in a contractionary effect on credit conditions. Especially in cases where the nominal effective lari exchange rate is stable, but there is significant depreciation against the USD, the balance sheet channel could dominate. Lower dollarization would curb the balance sheet channel and would increase the central banks' ability to ease credit conditions through policy rate cuts.

**40. Financial vulnerabilities together with limited monetary policy transmission explains how dollarization can limit the economy's ability to adjust to shocks.** In the extreme, the balance sheet effect of depreciations can trigger corporate and banking crises, exacerbate sudden stops, cause output volatility, and even result in self-fulfilling macroeconomic crises. At the same time, monetary policy is less able to stabilize the economy. Empirical evidence finds that dollarization is for example associated with a greater financial crises propensity, limited use of exchange rate flexibility and thus greater output volatility, and public debt crises.<sup>23</sup>

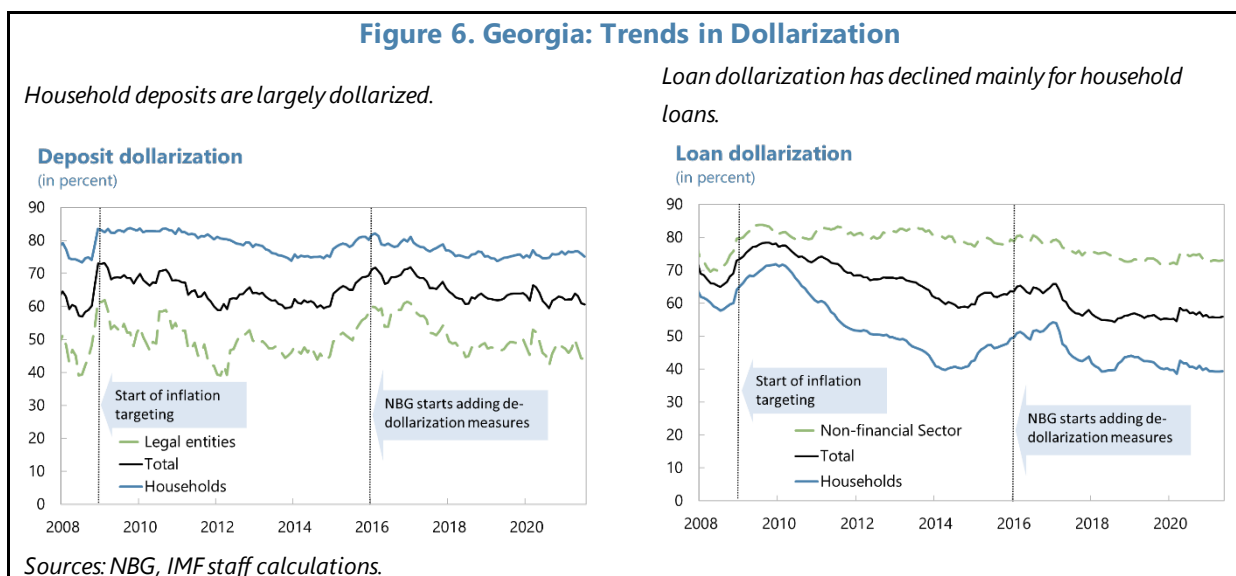
## **C. Drivers of Deposit and Loan Dollarization**

**41. While some level of dollarization is a natural consequence of growing trade integration and capital account openness, dollarization in Georgia exceeds cross-country benchmarks.** Despite the substantial cost discussed in the previous section, the optimal level of

<sup>23</sup> Ize and Yezati (2005) "Financial De-Dollarization: Is It for Real?"

dollarization is not zero (see Box 1 for more discussion). Access to dollar lending, for example, is beneficial for exporters that receive revenue in dollars or savers that want to insure themselves against price fluctuations of imported goods. Similarly, some financial dollarization may contribute to financial sector deepening, especially when inflation is high and volatile (De Nicolo, Honohan, and Ize (2005)) or when paired with external liability dollarization (Reinhart, Rogoff, Savastano (2014)). On the other hand, Bannister, Gardberg, and Turunen (2018), for example, find a negative relationship between financial development and dollarization. However, cross-country evidence (see Box 1) suggests that dollarization in Georgia is well above the level of countries with similar characteristics, warranting a closer look at the specific drivers for Georgia.

**42. Georgia experiences deposit-driven rather than carry-trade dollarization.** FX deposits are widely used as a savings vehicle, supplying banks with ample funding in foreign currency. Banks extend FX loans to close their net open foreign currency position. In contrast, many Eastern European economies experienced carry-trade euroization which creates long open FX positions on banks' balance sheets creating an additional source of financial stability risk. In Georgia, banks target a closed net open FX position. However, banks have started to offer EUR lending swapping their USD funding for EUR with correspondent banks, highlighting how cheap EUR funding has created some loan euroization in Georgia. This operation does not expose banks to exchange rate risk, but they take on interest rate risk in line with their risk appetite.



**43. Deposit dollarization in Georgia is largely driven by household savings.** As the interest differential between USD and GEL deposits has increased, corporate deposits have increasingly shifted into GEL, but the high dollarization of savings deposits of households indicates still-low confidence in the local currency. Households seek to insure themselves against tail risk and appear less sensitive to the USD/GEL interest rate differential. Moreover, the depreciating trend in recent years has made saving in lari ex-post unattractive even for risk-neutral investors.



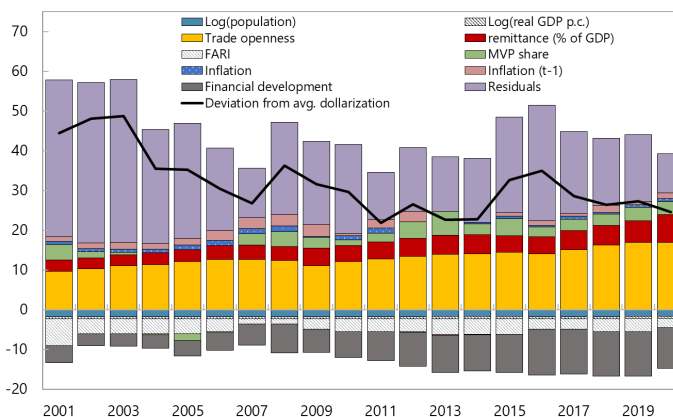
### Box 1. Drivers of Dollarization

**While high financial dollarization comes at significant costs to monetary policy transmission and financial stability, some dollarization is the natural consequence of growing trade and financial integration.** Using cross-country comparison, the literature has identified several factors associated with dollarization. These include for example trade and financial account openness which increase the need for financial products in foreign currency to hedge exposure, a low level of financial development, and the importance of remittance inflows. On the other hand, for example, Reinhart et. al. (2014) show that dollarization persists in countries with a history of hyperinflation even well after macro-economic and inflation stabilization.

**A cross-country panel regression highlights the contribution of key explanatory variables for deposit dollarization in Georgia.** Drawing in the coefficient estimates from a panel regression of deposit dollarization on structural characteristics and policy performance indicators following Della Valle et. al. (2018), the figure below illustrates the main contributors to dollarization in Georgia (see Appendix 1 for details). High trade openness and remittances inflows are structural characteristics associated with high dollarization which have become more important over time. The results also suggest that progress in financial development should contribute to lower dollarization going forward. In terms of policies, few restrictions on the financial account (FARI) facilitating capital account openness, also lead to more dollarization. On the other hand, high current and past inflation as well as the optimal mean-variance portfolio (MVP) implied by inflation and real exchange rate volatility contribute positively.<sup>1</sup> Finally, the residual for Georgia is very high, indicating the level of dollarization is well above that of a country with similar characteristics. The unexplained variation is likely due to the significant persistence in dollarization – similar to many other countries - after the period of high instability in the 90s not sufficiently captured by past inflation.

#### Contribution of Drivers of Dollarization

(FX deposit as a share of total deposit, in percent)



Sources: IMF staff calculations

**The cross-country panel regression suggests that the level of dollarization in Georgia is above the benchmark level.** Although the structural characteristics indicate that even if optimal policies stabilizing inflation, a country with Georgia’s fundamentals would still experience above-average dollarization, this benchmark level is still well below the current levels exceeding 60 percent, suggesting room to lower dollarization.

<sup>1</sup>The minimum variance portfolio has been shown in Ize and Levy Yeyati (2003) to explain levels of dollarization across countries. The optimal portfolio share of foreign currency is given by:

$$FX\ Share = \frac{Var(\pi) + Cov(dep)}{Var(\pi) + Var(dep) + 2Cov(\pi, dep)}$$

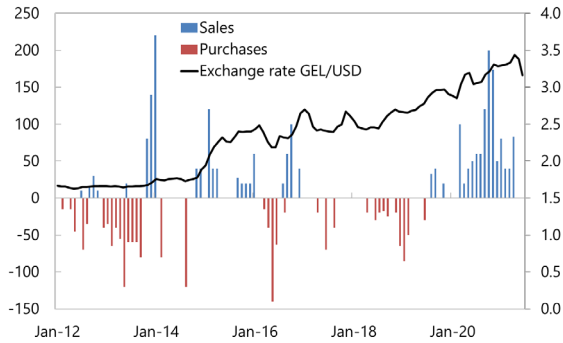
A high volatility in inflation relative to the volatility in real exchange rate depreciation makes foreign currency more attractive as a store of value as it lowers the variance of the portfolio – even if uncovered interest parity holds.

**Figure 7. Georgia: Drivers of Dollarization**

*FXI has been used more frequently amid depreciation pressures due to Covid.*

**FX Intervention by NBG**

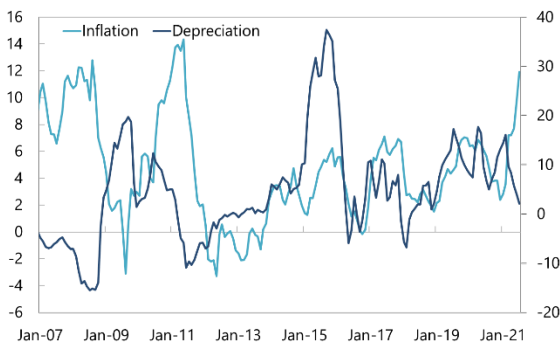
(in million USD)



*Exchange rate pass-through is high.*

**Inflation and exchange rate depreciation**

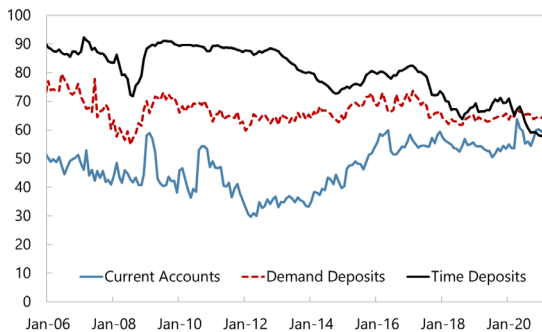
(Monthly annual percentage change, + depreciation (RHS) )



*Dollar is the dominant currency for savings, giving banks ample FX deposit funding...*

**Foreign currency share by type of deposit**

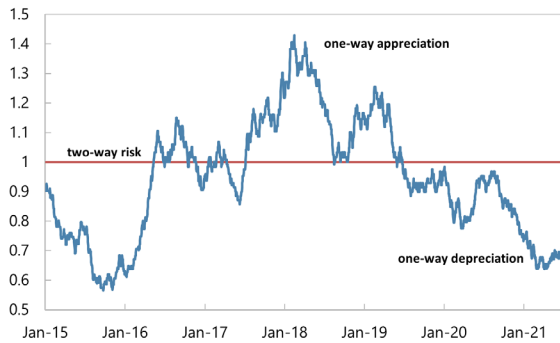
(in percent)



*Odd-ratio is mostly close to 1, but some depreciation bias in 2020.*

**Odd ratio of appreciation**

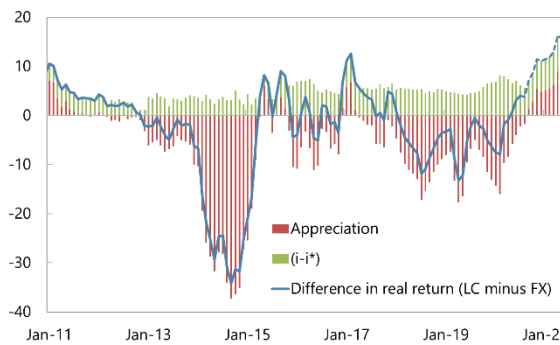
(over one year)



*Depreciation has made LC deposits relatively unattractive in 2019 and 2020.*

**Difference in real return between LC and FX deposits**

(in percent)

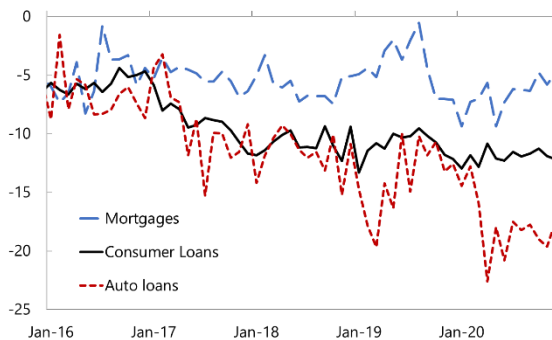


Notes: Appreciation equal to realized 1-year ahead value, assuming constant exchange rate from July 2021.

*... which also translates into lower interest rates on FX compared to GEL loans.*

**FX premium on new loans by product**

(FX interest rate minus GEL interest rate)

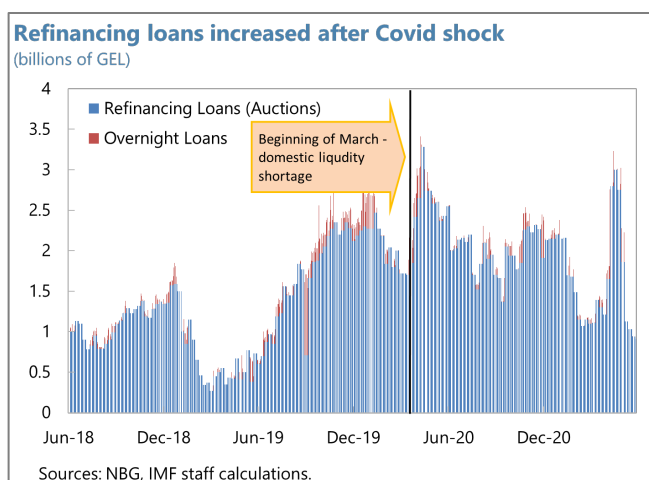


Sources: NBG, IMF staff calculations.

**44. Lack of trust in the lari paired with high inflation volatility relative to the real exchange rate motivates large dollar holdings.** A simple minimum variance portfolio model of currency choice illustrates that the optimal allocation depends on the relative volatility of real returns on local vs. foreign currency holdings. Despite recent increases in de-facto exchange rate volatility, the high pass-through of exchange rate movements into the domestic economy and inflation leads the NBG to frequently respond to exchange rate movements in their monetary policy decisions. As a result, the minimum variance portfolio allocation implies a higher FX share. Moreover, the high passthrough to prices increases the insurance value of FX savings for households for consumption smoothing.

**45. The shallow local capital market provides no alternative savings instruments, although the newly created pension fund provides some funding in local currency.** Bank deposits are the main saving vehicle in Georgia. In the absence of attractive savings instruments in local currency, stable funding in lari is scarce. The newly created pension fund has increased the supply of long-term lari deposits and is getting ready to expand its investment portfolio, which will grow steadily over the next decades.

**46. Banks have started to increasingly rely on financing from the central bank for liquidity management.** In 2019, refinancing loans picked up (text chart) and further increased as the system experienced an increase in demand for domestic liquidity after the COVID-19 shock in March 2020. The higher need for liquidity provision by the NBG is also partly due to changes in government operations. At the same time, banks secured sufficient private GEL funding to accommodate the de-dollarization of their assets – about 5.5 billion GEL in new lending.



**47. Market participants highlighted the perception of asymmetric foreign exchange intervention policies and limited two-way exchange rate flexibility.** They have misperceived the NBG's dual objectives of reserve accumulation and volatility reduction in the FX market at times as being in conflict. The NBG has accumulated international reserves to build buffers, which is cost-efficient when the exchange rate is on an appreciating trend. On the other hand, the NBG uses FX interventions to prevent excessive volatility in the exchange rate. The combination of these two objectives tends to create a misperception of limited two-way flexibility biased towards depreciation, which tends to reduce incentives for market participants to hedge against exchange rate appreciation and is generally unfavorable for the development of an FX derivatives market for hedging or speculation.

**48. The housing market and durable goods are priced in dollars, further increasing pass-through and the role of the exchange rate as the nominal anchor.** Most real estate sales and rental contracts are priced in dollars. This increases the pass-through to real estate prices and makes

the exchange rate a salient price for important economic transactions. This is mostly due to habit. A recent analysis by TBC capital (2019) estimates that even though construction depends on imports, their overall share in the cost of inputs is only 30 percent – excluding the role of land.

**49. Loan dollarization may be further exacerbated by low financial literacy and the large interest rate differential on loans.** The large amount of dollar funding is the key driver of loan dollarization. However, loan dollarization may be exacerbated by the large interest rate differential between GEL and USD (or EUR) loans. A lack of financial literacy or a perception that the central bank will not tolerate significant depreciation could lead borrowers to underestimate the exchange rate risk associated with FX loans. But also, a fully rational, although credit-constrained borrower may rely on FX loans instead of GEL. Whenever the exchange rate is expected to depreciate credit-constrained borrowers can backload the real interest payments on their multi-period loans if they borrow in foreign currency – described as the debt limit channel in Kolasa (2021).

## D. Policy Measures: Background and Assessment

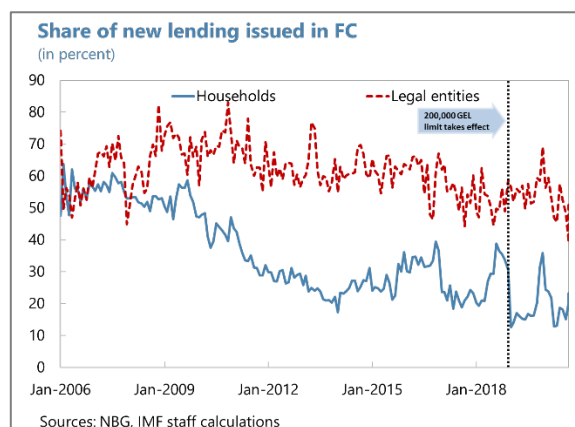
### Data Collection and Monitoring

**50. The NBG regularly monitors indicators of dollarization.** As one of five intermediate objectives of the Macroprudential Policy Strategy, de-dollarization of the financial system receives considerable attention in all discussions on financial stability. The NBG closely follows monthly data on deposit and loan dollarization, interest rates, and asset quality by currency. Similarly, liquidity conditions are followed carefully with regular updates on the LCR. The NBG also offers detailed discussions of the risks and latest developments in the Financial Stability Report.

**51. The NBG mostly draws on supervisory data from banks and continues to expand data collection.** NBG regularly collects and analyzes data on the issuance and pricing of loans by currency, product, and sector. Within the asset data collected for and following the definition used by the CICR, the NBG also occasionally collects information on the unhedged exposure across sectors. With the introduction of PTI and LTV ratios in January 2019, commercial banks have started to systematically collect information on borrowers' income and collateral values. The new data being accumulated over time will allow the NBG to better assess banks' asset quality and retail borrowers' income sensitivity to shocks, notably on exchange rate.

## Resilience of Borrowers

**52. Setting different PTI and LTV depending on loan currency as well as raising the minimum size of FX loans have limited FX lending.** The responsible lending regulation ensures that only borrowers with sufficiently high income and collateral can access FX loans, which helps limit credit risk exposure from unhedged borrowers. However, its impact on overall loan dollarization is hard to disentangle from the outright ban on FX lending below 200,000 GEL – raised from the previous limit of 100,000 GEL first introduced in 2017 – which took effect around the same time. The ban covers about 3/4 of household lending including mortgages and since 2019 also applies to legal entities. Accordingly, the issuance of new loans in FX has fallen markedly (see text figure). The downward trend has continued since, probably also because the depreciation made FX lending less attractive.



**53. There is no robust evidence that would suggest an adverse impact on access to finance from macroprudential measures or their systematic circumvention so far.** Consumer credit has continued to grow albeit at a more sustainable rate than during the previous household credit boom suggesting that access to finance was not unduly restricted. During the second half of 2020, a subsidy of 4 ppt on lari mortgages may have partially cushioned any adverse effect, but mortgages grew healthily even without the subsidy in Q1 2021. Supervisory data collected by the NBG also suggest that the 200,000 GEL limit is not routinely circumvented in bank lending. For example, there is no bunching of loans just above the limit. The NBG has also not seen a notable shift to non-bank financing.

**54. Financing provided by real estate developers through payments in installments could turn into a leakage of restrictions on FX mortgage lending.** Real estate developers offer payments in installments for new construction projects which are usually in USD. This type of in-house financing implies a higher down payment and shorter maturity than a mortgage, making it an imperfect substitute for mortgage lending. Moreover, real estate developers have limited balance sheets to provide financing on a larger scale. NBG estimates suggest that about 40 percent of real estate transactions correspond to new construction of which only around 1/4 use the in-house financing offered by real estate developers. However, some real estate developers appear to have started to occasionally offer installment payments at longer maturities and if they were to secure additional financing from banks, this activity could be used to circumvent the restrictions on FX mortgage lending more often.

## Capital Buffers

**55. The NBG requires additional capital buffers for currency-induced credit risk (CICR).** The stress results point to the overall preparedness of the banking system to absorb losses, suggesting that the capital buffers are adequate. The CICR buffer in particular cushions the system against losses resulting from lending to unhedged borrowers and represents an additional cost to banks when taking on unhedged exposure. The CICR is a Pillar 2 buffer equivalent to 75 percent additional risk weighting for loans to unhedged borrowers. The requirement was temporarily reduced to 25 percent as part of the NBG measures taken during the COVID-19 crisis. A timeline for rebuilding the buffer over the next two years has been announced in June 2021.

**56. Excluding hedged borrowers from CICR prevents inefficient constraints on credit allocation but defining hedged borrowers may be difficult.** Hedged borrowers are generally defined as those that borrow in the same currency as their income. The NBG's definition used for the CICR covers loans such as those exceeding GEL 5 million where repayment depends on income generated from exports invoiced in foreign currency, hotels with at least 50 percent foreign visitors, or electricity generation.<sup>24</sup> Overall, the definition takes a conservative approach from a regulator's perspective to define the hedging status. In practice, the definition has some limitations. Georgia's largest export markets are Azerbaijan, Russia, and Armenia. Exporters to these markets may invoice in USD but will adjust their prices relatively quickly if the USD appreciates against both local currencies. These exporters are insured against unilateral depreciations of the lari but may still be more exposed to global shocks than the invoicing currency may suggest.

## Funding and Liquidity

**57. Reserve requirements are higher in foreign currency and remunerated at a penalty rate.** To reflect the higher systemic liquidity risk from foreign currency deposits and make them a less attractive source of funding for banks, the reserve requirement for FX liabilities is 25 percent compared to 5 percent in lari. Moreover, the remuneration for FX reserve is 50 bp below the Fed Funds rate (20bp below ECB deposit rate for EUR reserves) whereas GEL reserves are remunerated at the monetary policy rate.

**58. In July 2021, the NBG has started differentiating reserve requirements across banks depending on the dollarization of their deposits.** Deposit dollarization varies substantially across banks, largely as a result of different business models. Now, for every two percentage points of deposit dollarization below 70 percent, a bank can lower its FX reserve requirement by one percentage point. The reserve requirement has a floor at 10 percent (for 40 percent or less of deposit dollarization). The measure releases some FX reserves to banks, but as aggregate deposit dollarization remains high, the effect on the aggregate FX reserves is expected to be small. In the short term, the NBG expects a modest impact from the measure as

<sup>24</sup> Claims depending on institutions that are risk-weighted by 0 percent according to Basel III and claims on companies with outstanding financials (Debt / EBITDA  $\leq$  1.5, EBIT / Interest  $\geq$  5%, Equity / Assets  $\geq$  75%) are also exempt from this additional capital requirement.

the financial gains for banks are also limited. However, there could be a signaling effect and greater competition for lari deposits between banks which, in combination with the recent tightening of the policy rate, would make lari deposits more attractive to savers.

**59. The LCR is differentiated by currency and the LCR and NSFR are also stricter for non-residents to reduce liquidity risk.** Both measures are calibrated to mitigate systemic liquidity risks including those stemming from the higher volatility of non-resident deposits as well as to promote resilience by incentivizing banks to attract more stable sources of funding on an ongoing basis. The LCR applies a higher run-off rate to non-resident deposits and under the NSFR non-resident deposits receive a lower available stable funding factor, thus discouraging capital inflows in the form of non-resident deposits. Moreover, the LCR for foreign currency is set above the LCR for lari.

**60. The liquidity measures appear adequate to limit liquidity risk.**<sup>25</sup> In the international comparison, the reserve requirement on FX is adequate to create a liquidity buffer against sudden outflows of dollar deposits in the current environment. The penalty remuneration is helpful to disincentivize financial intermediation in foreign currency and make lari deposits more attractive. The economic incentive for banks from the differentiation across banks is small, but the signaling effect may encourage banks to expand lari funding. The LCR and NSFR appear adequate to measure, monitor, and limit systemic liquidity risk from high dollarization. The share of non-resident deposits has remained stable in recent years and FX liquidity appears robust to shocks as suggested by the liquidity stress test.

### Administrative Measures

**61. The NBG closely collaborates with the Ministry of Finance to encourage the use of lari in pricing and increase borrowers' financial literacy.** Since 2017, all prices must be stated in lari to encourage the use of the local currency as a unit of account. Transactions are already mandated to be in local currency, hence the use of foreign currencies as a medium of exchange is very limited. To further encourage the use of lari in the settlement of real estate transactions, the authorities, together with the public registry, introduced an escrow account service. To increase awareness of the exchange rate risk when borrowing in foreign currency, banks must show borrowers how much their monthly payments will increase in response to a 15 percent depreciation.

**62. The impact of these administrative measures is difficult to measure.** The US dollar continues to be widely used in contracts, especially for real estate. The pricing regulation is easy to circumvent. For example, real estate websites often offer a button to convert all prices to USD. Measures to increase financial literacy were implemented at the same time as other restrictions. The experience of other dollarized economies suggests that it will take time to replace the USD with lari as the nominal anchor but small nudges towards using lari may help to reduce the usage of dollars, where it stems from habits and not economic incentives.

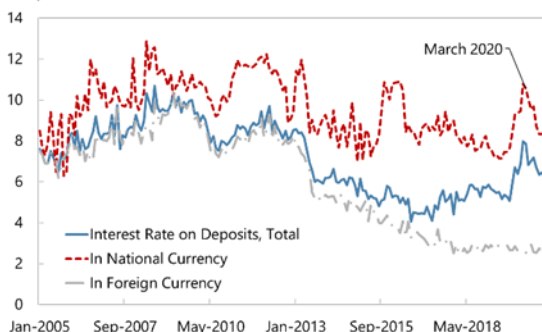
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<sup>25</sup> See liquidity stress test results in accompanying technical note: "Georgia FSAP 2021 TN on Stress Testing and Financial Stability Analysis".

**Figure 8. Georgia: Impact of Policy Measures of Deposit Dollarization**

*The interest rate differential on deposits has widened.*

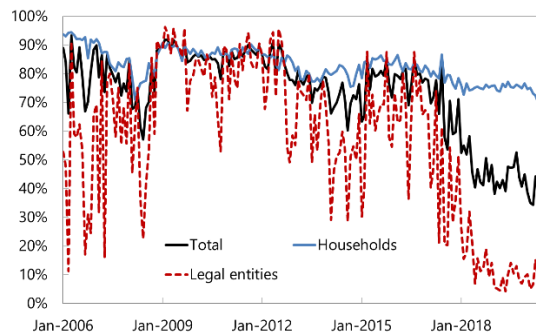
**Market Interest rate on deposits**  
(in percent)



Sources: NBG, IMF staff calculations.

*Share of new deposits in FX have fallen, especially for corporates.*

**Share of new deposits in foreign currency**  
(in percent of total deposits issued)



Sources: NBG, IMF staff calculations

## FX and Capital Market Development

### 63. Recent reforms have supported the functioning of the FX market.

- **FX spot market:** The introduction of an electronic FX trading platform based on Bloomberg (bmatch) in 2020 has improved market liquidity and significantly reduced bid-ask spreads in the FX spot market. The platform also allows large corporates with access to a Bloomberg terminal to directly participate in the otherwise relatively concentrated market.
- **FX derivatives market:** FX derivatives such as FX swaps are expensive in Georgia. In December 2019, the Parliament of Georgia approved the legislative package on financial collateral, netting, and derivatives in line with ISDA international practice. The FX swap facilities introduced by the NBG to backstop the market after the COVID-19 shock have helped banks and microfinance institutions, even though only 10 – 15 percent of resources were drawn on.

**64. The perception of lack of two-way volatility in the exchange rate and insufficient IT infrastructure of commercial banks hold the FX market back.** Continuous depreciation, such as over the last year, provides little incentive to hedge against exchange rate appreciations. The NBG is working on an FX interventions strategy to improve communication and better coordinate the objectives of reserve accumulation and prevention of excessive exchange rate volatility in its operations. At the same time, banks are still lacking the internal IT systems to fully benefit from the new FX trading platform and efficiently manage risks. Upgrades of IT infrastructure, potentially also through shared software, will support market functioning.

**65. The Ministry of Finance has made local market development a priority.** Market size and liquidity are the main constraints of the local market for government debt. Georgia has the highest share of foreign-currency government debt in the region – over 80 percent as of the end of 2020. To develop the local yield curve, the MoF has started issuing benchmark bonds in 2018. In November



2020, a pilot program for a primary dealer system commenced. The primary dealers are expected to act as intermediaries between the MoF and investors, helping to diversify the investor base, and enhancing the secondary market liquidity via regular price quoting and the provision of appropriate trading and settlement infrastructure for every participant of the market. Finally, the MoF is actively strengthening investor relations to increase the share of non-resident investors (currently around 10 – 12 percent). However, the COVID-19 crisis favored the issuance of a Eurobond instead of going to the domestic market, temporarily halting the move to more domestic debt.

## E. Policy Recommendations

**66. Further progress on Georgia’s de-dollarization agenda will require macroprudential measures to be embedded in a comprehensive de-dollarization strategy.** Macroprudential measures have substantially reduced financial vulnerabilities from unhedged borrowing and increased liquidity buffers. The measures have also reduced incentives for financial intermediation in foreign currency, including through higher interest differentials between lari and USD deposits. Over the medium term, the authorities should consider tightening dollarization measures gradually, with the choice of measures and calibration informed by impact assessments. The long-term success of the strategy will depend on how those macroprudential measures are complemented by further creating trust in the local currency and building a track record of inflation stability to reduce deposit dollarization, the perception of two-way exchange rate flexibility to facilitate the deepening of the FX derivatives market, and local capital market development to attract more local currency funding in the medium term.

**67. The NBG should periodically review the calibration and implementation of its macroprudential toolkit targeted at dollarization to encourage larization.** The macroprudential toolkit is comprehensive and no new measures appear necessary at the moment. Given the substantial risks from financial dollarization, the NBG should periodically review its toolkit. Re-calibration of some measures may help to make them more targeted and the NBG needs to continue to monitor potential leakages of macroprudential tools to develop policy responses as needed. However, overall, the toolkit is comprehensive and in line with international practices.

**68. Long-term success on de-dollarization takes time, especially for deposit-driven dollarization.** Cross-country experience provides some guidance on the key elements of a successful strategy (Della Valle et al (2018)):

- **Reduce expectation of continued exchange rate depreciation:** To reduce the perception that foreign currency deposits are a good hedge against exchange rate risk and break entrenched exchange rate depreciations, sound and sustainable macroeconomic policies, fiscal discipline, and credible institutions are key prerequisites. In many countries, progress on de-dollarization was faster in periods of fiscal consolidation and with a temporary stable or appreciating exchange rate (e.g., see Garcia-Escribano and Sosa (2011) for evidence on four Latin American countries). Georgia has already undertaken substantial reform for sound macroeconomic policies and cross-country experience suggests that a long enough track record will eventually change economic expectations.

- **Reduce the insurance value of foreign currency deposits:** Until a central bank has established its reputation for delivering stable and low inflation over time, foreign currency deposits remain attractive as insurance against inflation volatility. More stable inflation compared to movements in the real exchange rate shifts the minimum variance portfolio towards local currency (Ize and Levy-Yeyati (2003)). However, the contractionary effect of real exchange rate depreciation may limit the monetary policy space in the early phases of de-dollarization and the weight of the exchange rate in monetary policy decisions may still be relatively high. In the meantime, prudential measures such as higher FX reserve requirements that reduce the return on FX deposits are helpful to incentivize savings in local currency.
- **Develop local capital markets:** A more developed capital market creates more investment opportunities in local currency. This provides more banks' term funding in local currency at lower costs and establishes a yield curve along which loans can be priced, thereby supporting the supply of local currency-denominated loans.

### Data Collection and Monitoring

**69. The NBG should continue to systematically track and analyze potential leakages and unintended consequences of de-dollarization measures.** For example, installment contracts offered by real estate developers are normally denominated in USD, but real estate developers are not under the supervision of the NBG. So far, installment payments appear to be limited in scale and indirect exposure of banks through lending to real estate developers is not significant. However, this type of financing should be followed closely to identify potential systemic vulnerabilities from this sector which could spill over to the banking system either through lending to real estate developers or house prices. Thus, the NBG should remain vigilant if real estate developers raise more funds through bond issuance or bank lending.

**70. Streamlining the data collection on unhedged credit by sector would facilitate a more systematic and regular analysis of corporate sector vulnerabilities.** Currently, the NBG only receives aggregate data on unhedged credit on a monthly basis and collects sectoral data on a one-off basis. Together with the additional data compiled in the credit registry and a more granular sectoral classification for loans, the data on hedging status by sector could be a useful resource to monitor sectoral exposures to exchange rate risk and re-calibrate macroprudential tools if needed.

### Resilience of Borrowers

**71. Further reduction in asset dollarization can be done through different channels, including borrower-based measures, but risks creating unintended consequences.** A tightening of PTI/LTV requirements could limit household borrowing in FX further while still making FX credit available to the most resilient borrowers. However, due to the ban on FX lending below 200,000 GEL, the change in the ratio may need to be relatively large to achieve the desired reduction in FX lending. This adjustment may be difficult to motivate solely by the risk to the borrower since differentiated PTI requirements already imply a significant buffer for depreciation. While the authorities may decide on gradually increasing the 200,000 GEL limit, such increases could increase

corporate loan dollarization (if applied only to physical persons). In considering further restrictions to reduce asset dollarization, the NBG should be mindful of the immediate impact on banks and their ability to attract sufficient local currency funding. As long as dollarization of liabilities remains high, large, abrupt changes to asset dollarization could lead to financial disintermediation and create financial instability.

**72. Careful impact assessments should inform the re-calibration of measures and the choice between market-based, borrower-based and outright measures.** The impact assessment should consider how much the measure lessens the severity of the crisis, efficiency costs (such as cost of credit, access to finance), compliance cost, and the potential for unintended consequences (e.g. leakages or risk shifting). Market-based measures, such as the FX reserve requirement or capital requirements, are generally better suited to avoid inefficiencies in the allocation of credit as they work through price adjustments, but unintended consequences may be more difficult to control. On the other hand, borrower-based measures such as the PTI/LTV limits on FX lending give more room for regulators to target specific lending activity to more vulnerable borrowers, but usually rely on additional data which may be difficult to obtain, increasing compliance cost and efficiency costs if borrowers fall outside the norms. Outright restrictions such as an increase in the 200,000 GEL limit are likely to entail even higher efficiency costs and are not well targeted to inherent vulnerabilities but can be easier to communicate, implement and monitor.

### Capital Buffers

**73. The NBG should monitor the planned re-building of the CICR buffer.** In June 2021, the NBG announced the restoration of the CICR buffer by January 2023. The CICR represents a second line of defense against risks from unhedged credit and needs to return to the original level of 75 percent. The re-building is expected to happen in coordination with the rebuilding of all capital buffers as the recovery from the COVID-19 shock takes hold.

**74. The definition of hedged exposure could be revisited to consider export market as well as invoicing currency in the medium term.** Equipped with fresh data from the COVID-19 crisis, the NBG should revisit the definition of hedged exposure used for the CICR and analyze which exporters may be exposed to more exchange rate risk than suggested by the invoicing currency used, especially those targeting regional export markets. The current definition appears already relatively conservative and the size of the buffer adequate, additional analysis could help to better target the regulation – especially if sectoral vulnerabilities were to build up in the future.

### Funding and Liquidity

**75. The current liquidity requirements appear sufficient, but the NBG should continue to monitor for liquidity risks.** The stress test results found that banks are sufficiently liquid in local and foreign currency under various plausible scenarios of deposit outflows. This suggests the current liquidity requirements (LCR, NSFR, and reserve requirements) create appropriate liquidity buffers. Nevertheless, the still-high deposit dollarization warrants careful monitoring for liquidity and funding risks, including from non-resident deposits if they were to increase.

## Administrative Measures

**76. The NBG should continue to clearly communicate risks from FX borrowing to support financial literacy and explore additional incentives for pricing and contracting in GEL.** While it will take time to reduce the salience of the exchange rate as a nominal anchor, especially in the housing market, the authorities should continue to promote the use of local currency in pricing. Clear communication on FX risks and educational programs to enhance financial literacy should support those goals.

## FX and Capital Market Development

**77. The NBG should work to reduce the perception of one-way flexibility of the exchange rate, for example by publishing the FX Intervention strategy.** The use of FX intervention to prevent excessive exchange rate volatility can at times conflict with the NBG's participation in the market to accumulate reserves. Maintaining adequate international reserves helps to sustain confidence in the currency and is an important buffer in times of large exchange rate fluctuations. However, when reserves accumulation is required, the NBG should seek to minimize the impact on the exchange rate, for example by communicating its objectives clearly, emphasizing that reserves accumulation is a finite process, and considering a pre-announced program of small purchases to complement larger ones. Publishing an FX intervention strategy would be an important step in reducing the perception of one-way flexibility.

**78. Further deepening of the FX market and developing the local capital market will be essential in supporting the de-dollarization agenda.** A well-functioning FX derivatives market helps economic agents to share risks created by exchange rate volatility. A more developed capital market can attract more funding in local currency and will help to reduce the dollarization of public debt. Both the risk-sharing and the greater availability of local funding will complement the macroprudential tools to advance de-dollarization and help to cushion some of the costs associated with high exchange rate volatility.

**79. Plans to develop a covered bonds market would support market development and may attract more investment in local currency.** Introducing covered bonds in Georgia could help to replace non-marketable with marketable collateral and expand long-term financing for mortgages. This new instrument could attract interest from the pension fund, commercial banks, and non-resident investors. The latest draft legislation on covered bonds closely follows EU directives to be able to attract international investors. Although the legislation is expected to be adopted soon, fully developing a covered bond market will take time. In the medium-term, covered bonds could increase the availability of local currency funding and help reduce dollarization.

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## Appendix I. Regression Output for the Drivers of Dollarization

<b>Panel Regression: Drivers of Dollarization</b>		
	Share of FX Deposit (t)	
	(1)	(2)
Log of Population	-1.244	-1.310
(t)	(1.232)	(1.234)
Log of Real GDP per capita in USD	-0.021	-0.063
(t)	(2.353)	(2.374)
Trade Openness	0.143**	0.145**
(t)	(0.063)	(0.063)
Remittance in percent of GDP	0.401	0.428
(t)	(0.465)	(0.468)
FARI	-38.047***	-38.432***
(t)	(8.435)	(8.359)
MVP_share	11.222***	10.727**
(t)	(4.270)	(4.246)
Inflation	0.338	0.146
(t)	(0.216)	(0.175)
Inflation		0.302***
(t-1)		(0.102)
FD	-39.774***	-38.044***
(t)	(10.110)	(10.194)
Dummy Variable: Europe	10.861***	10.580***
(t)	(3.456)	(3.446)
Constant	38.161*	37.438*
	(20.923)	(21.200)
Year F.E.	No	No
Observations	754	754
R <sup>2</sup>	0.525	0.529
Adjusted R <sup>2</sup>	0.519	0.522
Residual Std. Error	14.938 (df = 744)	14.889 (df = 743)
F Statistic	91.337*** (df = 9; 744)	83.325*** (df = 10; 743)
Note:	*p<0.1; **p<0.05; ***p<0.01	

<b>Description and Sources of Variables Included in the Regression</b>		
Variable	Description	Source
FX Deposit (% of total deposit)	Total FX deposit including transferable deposits and other deposits divided by total deposits	IMF Monetary and Financial Statistics
Population	Log of Population	IMF WEO
Real GDP per capita	Log of Real GDP per capita in USD	IMF WEO
Trade Openness	Total Import and Export in percent of GDP	IMF WEO
Remittance	Personal Remittance in percent of GDP	IMF WEO
FARI	Financial Account Restrictiveness Index	AREAER
MVP share	(Variance of Inflation + Covariance of Inflation and Real Exchange rate) / (Variance of Inflation + Variance of Real Exchange rate + 2* Covariance of Inflation and Real Exchange rate)	IMF WEO
Inflation	Period Average Consumer Price percent change	IMF WEO
FD	Financial Development Index	IMF FD Dataset