



# ALBANIA

## SELECTED ISSUES

January 2025

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## SELECTED ISSUES

December 17, 2024

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## CONTENTS

### FOREIGN EXCHANGE INTERVENTION THROUGH THE LENS OF THE QUANTITATIVE INTEGRATED POLICY FRAMEWORK: THE CASE OF ALBANIA \_ 3

A. Introduction	3
B. QIPF Model	5
C. Results	6
D. Conclusion and Policy Considerations	10

### FIGURES

1. Exchange Rate, Foreign Reserves, and Foreign Exchange Intervention	3
2. Measures of Market Liquidity	4
3. Currency Mismatches and Inflation Expectations	5
4. Tourism Scenario Under Alternative Monetary Policies	7
5. Real Exchange Rate and Counterfactual	8
6. Capital Inflow Surge Under Alternative Central Banks Responses	9
References	11

### STRESS TESTING THE ALBANIAN BANKING SECTOR: A DECADE POST-FSAP 12

A. Introduction	12
B. The Albanian Banking Sector: A Quick Glance	14
C. Stress Testing Banks' Capital Adequacy	15
D. Stress Testing Banks' Liquidity Resilience	19

### FIGURES

1. Banks' Non-performing Loans and Profitability	12
2. Bank's Sovereign Exposures and Credit Growth	13
3. Structure of the Banking Sector, Q1 2024	14

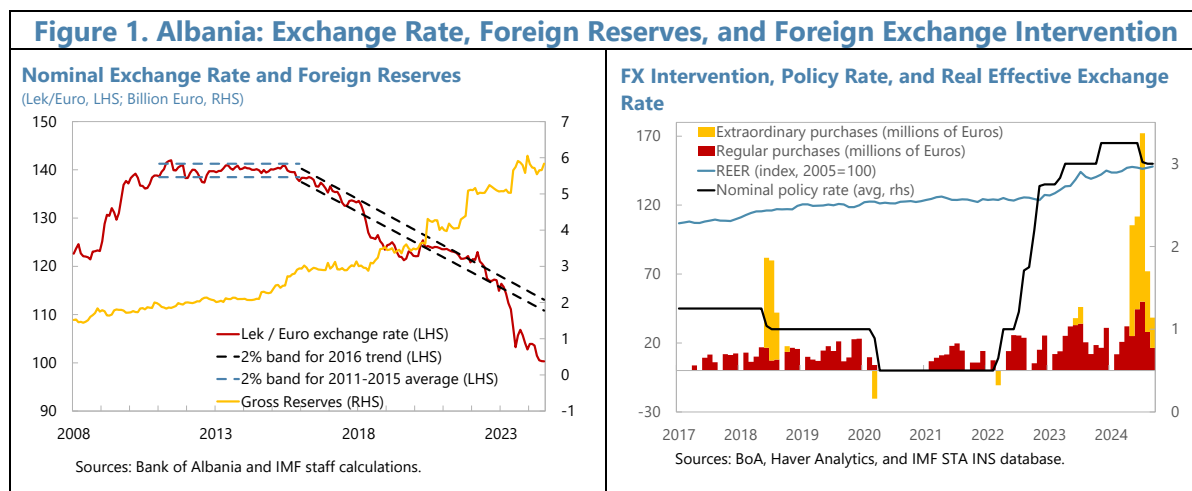
4. Actual Rates of Macroprudential Tools	14
5. Banking Sector and Liquidity Ratios (All Currencies)	15
6. General Credit Risk Results	16
7. Large Exposure Risk Results	17
8. Interest Rate Risk Results	18
9. Exchange Rate Risk Results	19
10. Composition of HQLA in Lek	19
11. Liquidity Risk Results	21
References	22

# FOREIGN EXCHANGE INTERVENTION THROUGH THE LENS OF THE QUANTITATIVE INTEGRATED POLICY FRAMEWORK: THE CASE OF ALBANIA<sup>1</sup>

## A. Introduction

1. The IMF's integrated policy framework (IPF) provides a systemic approach to determining an appropriate policy mix in the presence of frictions.<sup>2</sup> The IPF considers three types of frictions (or "use cases") that may warrant the use of foreign exchange intervention (FXI) to complement the policy toolkit: 1) shallow or temporarily illiquid FX markets, 2) unhedged currency exposures of balance sheets, and 3) de-anchoring of inflation expectations from high exchange rate pass-through.

2. The IPF can provide a useful framework for shaping the policy discussion in Albania. Albania is a small open emerging market economy with an inflation targeting regime. Underpinned by the strong macroeconomic performance amid a tourism boom, the Albanian lek has been on a sustained appreciation trend. To stem appreciation pressures, the Bank of Albania (BoA) has intervened forcefully, with the size of FXI during the first 9 months of 2024 amounting to 2.6 percent of 2023 nominal GDP, almost triple the amount of the same period in 2023.

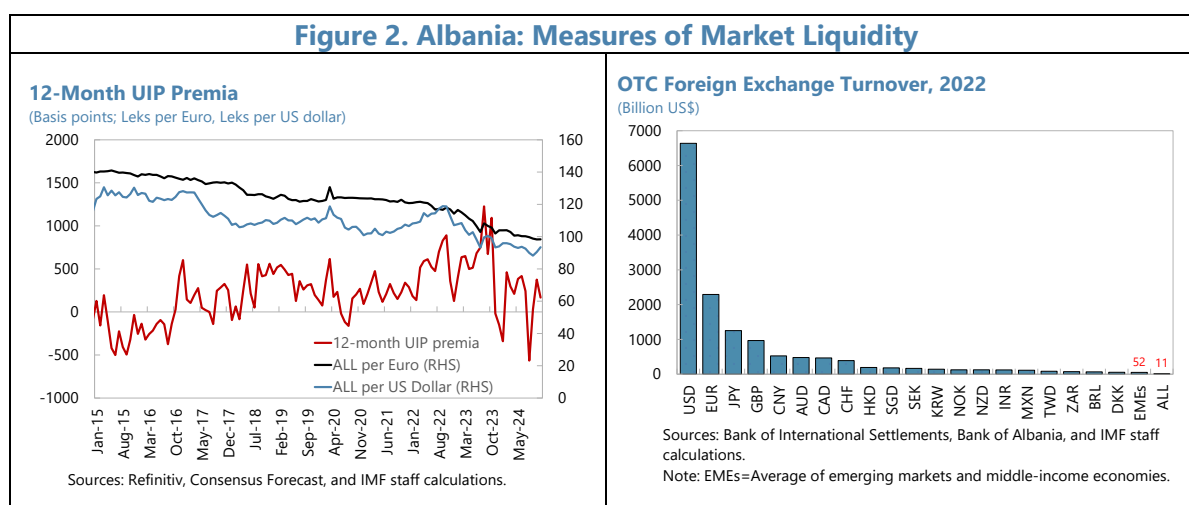


3. Albania's shallow FX markets stand out as the key IPF friction that may create a case for FXI. When markets are shallow, financial intermediaries may have limited capacity to absorb excess currency demand or supply resulting from financial shocks, which can cause significant

<sup>1</sup> Prepared by David Bartolini, Jakree Koosakul (both EUR), Rebecca Huang, Jesper Linde, and Roland Meeks (all MCM)

<sup>2</sup> The concepts of the IPF are documented in a series of papers with [IMF 2020](#) laying out the key concepts, and [Basu et al. 2020](#), [Adrian et al. 2020](#), [Adrian et al. 2021](#), [Chen et al. 2023](#), [Basu et al. 2023](#) and [Basu and Gopinath 2024](#) providing the main conceptual and quantitative modelling frameworks, while [IMF 2023](#) provides guidance on FXI.

deviations of the exchange rate away from the fundamental value, with implications for macroeconomic and financial stability. With sizable UIP premia observed during some periods and yearly turnover of 11 billion USD, well below the average turnover among emerging market economies of 52 billion USD, Albania's FX markets can be characterized as shallow (as will be confirmed by the quantitative model below). High volatility in UIP premia, especially since Q1 2023, is also an indicator of shallow FX markets. The presence of shallow markets may hence justify the use of FXI to moderate excessive exchange rate movements, although this would depend on the specific nature of the shocks faced by the economy and the associated policy trade-offs (or lack thereof).



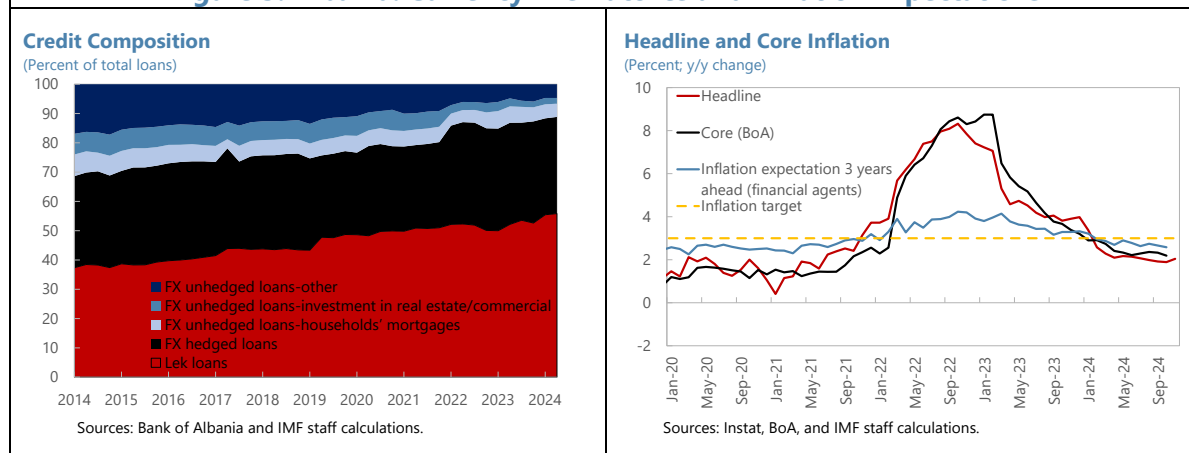
**4. Risks related to FX mismatches and de-anchored inflation expectations appear broadly contained and would be better addressed through other policy tools.** Broad-based FX mismatches among Albanian firms and households have declined significantly, with the share of unhedged FX loans having declined from 50 percent of total loans in 2014 to 25 percent in 2024. While residual risks remain, notably in the real estate sector (which accounts for two-thirds of unhedged FX loans in 2024), preemptive and targeted measures in the form of MPMs appear to be more appropriate than FXI.<sup>3</sup> While recent estimates suggest some degree of exchange rate passthrough to inflation in Albania<sup>4</sup>, inflation expectations appear well-anchored. In addition, there is room for monetary policy to support a sustainable return of inflation to target without the use of FXI.<sup>5,6</sup>

<sup>3</sup> Such measures are discussed in the 2024 Albania Article IV Report.

<sup>4</sup> Empirical analysis on exchange rate passthrough to headline CPI, following [Gopinath \(2015\)](#) shows a cumulative impact of about 0.2 percent (for a 1-percent appreciation) over four quarters.

<sup>5</sup> See the discussion on monetary policy in the 2024 Albania Article IV Report.

<sup>6</sup> There may, however, be some interaction between exchange rate passthrough to inflation and shallow markets, a feature that is incorporated into our analysis below.

**Figure 3. Albania: Currency Mismatches and Inflation Expectations**

**5. This paper examines the case for FXI in the context of Albania by estimating an IPF model to quantitatively illustrate relevant policy tradeoffs.** A version of the quantitative IPF (QIPF) model (Adrian et al., 2021; Chen et al., 2023) is estimated for Albania, with the aim to examine the merits of FXI in response to shocks amid shallow FX markets. Two specific types of shocks are considered, namely 1) a fundamental shock in the form of a tourism boom, and 2) a non-fundamental shock in the form of exogenous portfolio inflows caused by a risk-on episode.

**6. The remainder of the paper proceeds as follows.** Section B provides a description of the model, its estimation/calibration, and the specific shocks being considered. Section C discusses the main results under the two shocks as well as from an exercise that attempts to decompose the variation of the exchange rate into fundamental and non-fundamental components. Section D concludes.

## B. QIPF Model

### The IMF's QIPF—Estimated for Albania

**7. The model—key characteristics.** The QIPF model is a New Keynesian open economy model tailored to capture key features of advanced and emerging market economies (AEs and EMEs) (see also Adrian et al. 2021). The estimated model for Albania is a linearized version of the QIPF model following Chen et al. (2023), in which the home economy is “small” in the sense of having no impact on the “rest of the world”, represented here by the euro area. The model of Chen et al. is extended to include trend productivity growth and a domestic financial sector. It is assumed that FX intermediaries have limited risk-bearing capacity (as in Gabaix and Maggiori, 2015), which helps to generate realistic levels of exchange rate volatility. This feature also implies that sterilized FX interventions have real effects and creates a rationale for such interventions to counter inefficient fluctuations in the UIP premium.

**8. Estimation for Albania—key properties.** The model is estimated on a dozen quarterly series for Albania over the period 2009–2024 using Bayesian maximum likelihood. The euro area block is estimated separately, but a suitable set of euro area variables are included in the estimation

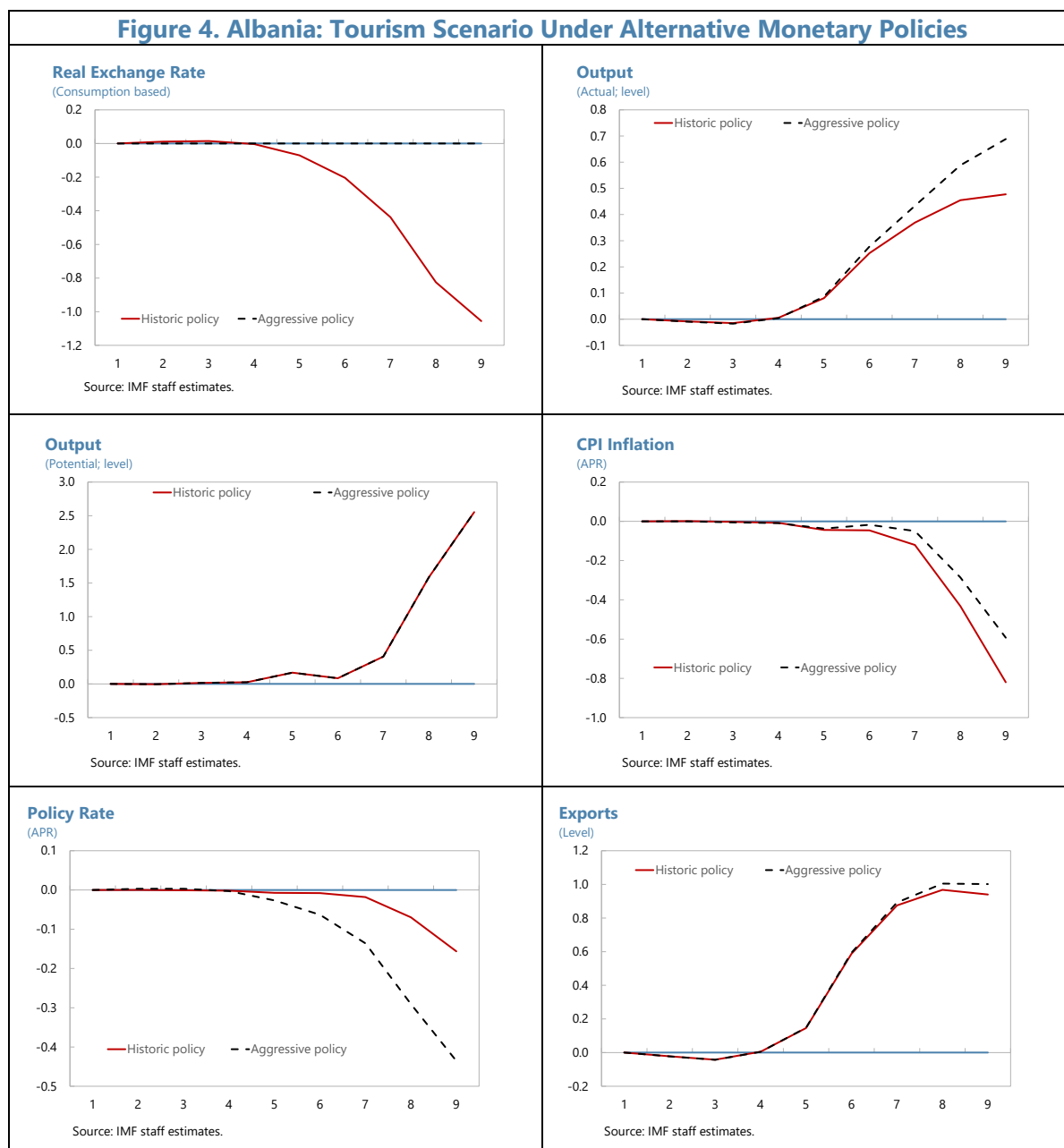
to ensure a proper role for foreign fluctuations. The estimates indicate that pass-through of nominal exchange rate movements to consumer prices is gradual, due to the presence of local currency pricing-to-market behavior. Even so, the estimated model implies that inflation expectations are well-anchored in the medium and long run. Interest rate policy is estimated to gradually adjust to deviations of expected one-year ahead core inflation from target and economic activity (output as deviation from trend), and to transmit effectively to prices and the exchange rate relative to output.

**9. The foreign exchange market is estimated to be shallow.** Consistent with the preceding analysis in Section A, the preferred specification of the model suggests that the FX market in Albania is often shallow. This implies that FX interventions that either persistently depreciate or appreciate the Albanian Lek can have sizeable macroeconomic effects on core inflation and domestic economic activity, especially if the domestic policy rate is passive and not aggressively changed to offset the exchange rate impact of the FX intervention. Nonetheless, FX interventions are neither warranted nor necessary for fundamental shocks as demonstrated below, but may be useful to lean against temporary non-fundamental capital in- and outflows.

## C. Results

### Scenario analysis—A tourism boom

**10. We consider a stylized scenario where tourism growth is driven by improved fundamentals.** Albania has experienced strong growth in its tourism sector along with an appreciation of the real exchange rate. This raises the question of how to calibrate policy instruments in response to such developments. To shed light on this issue, we analyze a stylized scenario intended to capture key aspects of a continued tourism-driven expansion in economic activity with higher net exports, stronger domestic demand, and an appreciation of the real exchange rate. The paths for these variables in the scenario are depicted by the red solid lines in Figure 4. We assume that the key economic drivers of the tourism scenario are movements in ‘fundamentals’ such as productivity (both catch-up trend growth, and temporary moves), the relative price of Albanian exports, and domestic demand shocks, all phased in gradually in the scenario as surprises (so called MIT shocks following the terminology in Boppart, Krusell and Mitman, 2018). This implies that the scenario builds up gradually—and that the central bank is continuously surprised by new shocks—over time. Hence, as in real world policy making, the central bank does not have perfect foresight and gradually learns about the evolution of the economy in the scenario. A significant consideration for the response of policy in the scenario is that the shocks raise potential output more than actual output.

**Figure 4. Albania: Tourism Scenario Under Alternative Monetary Policies**

**11. Monetary policy appears to be a suitable policy tool in the tourism scenario.** In our baseline scenario, depicted by the solid red lines in Figure 4, monetary policy is assumed to follow its estimated historical policy rule, which can be thought of as an average over past monetary policy reactions to core CPI inflation and fluctuations in output around trend. Monetary policy eases, because the lek's appreciation puts downward pressure on import prices, and productivity improvements lower domestic unit output costs and put downward pressure on domestic inflation. As prices and wages are sticky and the central bank in the baseline is assumed not to recognize that potential output has increased, actual output does not expand as fast as potential output in the scenario, which causes inflation to fall below target. Accordingly, there is a case for additional



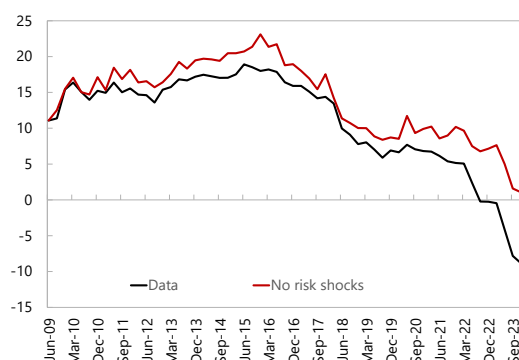
interest rate policy easing that we model as discretionary policy interventions. In this alternative scenario, additional policy rate cuts are for simplicity assumed to offset the appreciation in the lek.<sup>7</sup> As a result, the output gap narrows and inflation is brought closer to target, while avoiding volatile movements in interest rates. Note that this scenario is intended to be illustrative rather than prescriptive: although FX markets are considered shallow, monetary policy retains significant traction over exchange rates and there is no need to intervene in currency markets. The challenge for the central bank is – in real time – to recognize that potential output has risen and that the strong expansion in economic activity will not induce inflationary pressures down the road.

## Risk Shocks

### 12. Fundamental forces have been the principal driver of the real exchange rate, with sentiment-driven capital flows only a secondary factor.

Our model allows capital flows to be driven by non-fundamental (“risk-on”) shocks, which impact the real exchange rate due to the shallowness of currency markets. Estimates for Albania indicate that while fundamental shocks have been the primary driver of real exchange rate movements, such non-fundamental shocks have, on average over the period under study, contributed only modestly to variability in the lek/euro real exchange rate (5 percent in a long-run variance decomposition sense if FXI is reacting to exchange rate movements, and around 15 percent assuming no FX interventions are used to lean against exchange rate movements). Over shorter horizons, though, the effect of risk shocks on the exchange rate can be more material. In the figure above we show data on the consumption-based RER in terms of deviation from its long-run average alongside a counterfactual simulation in which there were no disturbances to non-fundamental capital flows. The difference between the two lines can be read as the cumulative contribution of risk shocks to the RER, and since 2021 it appears that such shocks appreciated the lek by around 11 percent. The precise numbers are subject to uncertainty arising both from estimation (given the relatively short sample to hand), and model specification.

**Figure 5. Albania: Real Exchange Rate and Counterfactual**  
(Consumption based)



Source: IMF staff estimates.

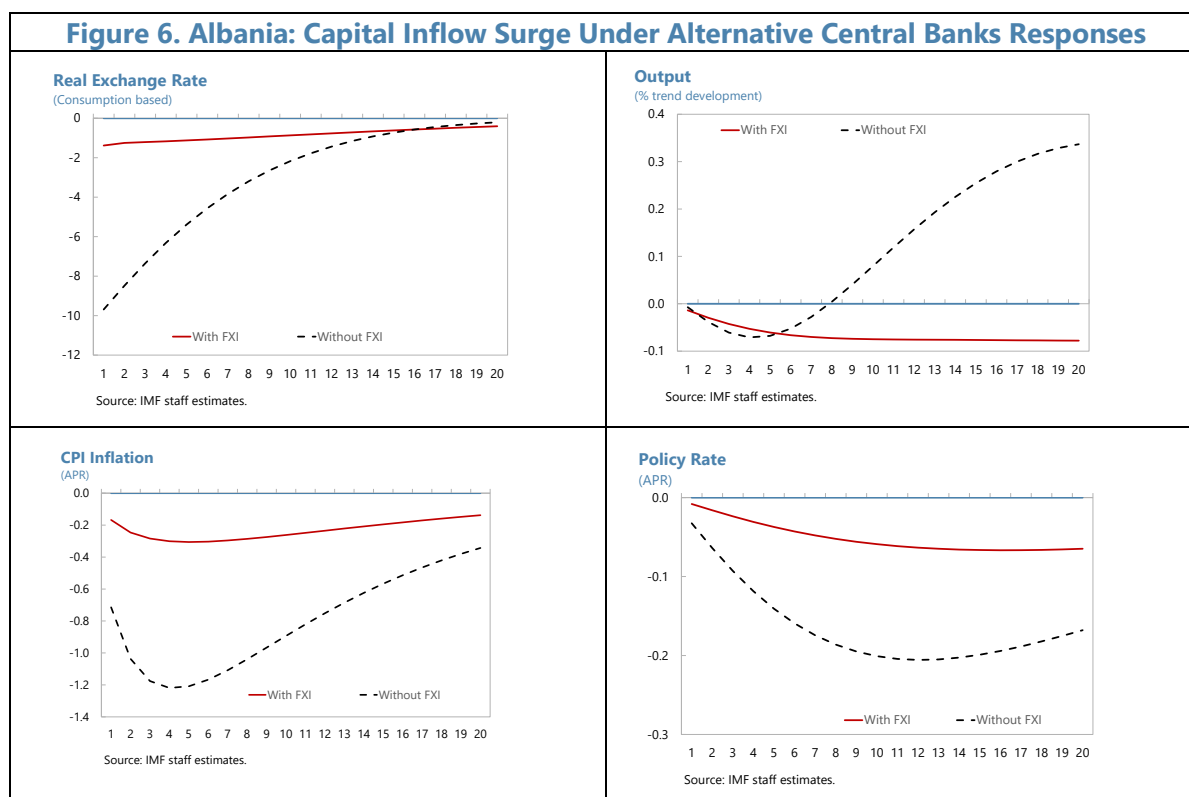
### 13. Exchange rate volatility driven by non-fundamental factors may present policymakers with a trade-off between stabilization objectives.

Risk-on or off shocks may be of concern to policymakers, especially if disturbances have persistent effects on capital flows, because they lead to

<sup>7</sup> Offsetting the real exchange rate appreciation with additional interest rate cuts is not necessarily an optimal interest rate policy in the scenario, but it gives an assessment of how interest rate policy that does not allow for RER appreciation can improve outcomes. For example, measured by a standard central bank objective function that is quadratic in the output gap and inflation, the alternative policy delivers a 25 percent improvement over the historical policy response. Since the output gap remains negative and inflation remains below target one would consider an even more stimulative policy rate path.

fluctuations in the UIP “wedge”, which is an indicator of the extent of frictions in international financial markets. Moreover, such risk shocks may induce a trade-off between output and inflation in Albania according to the estimated model. Such a trade-off is illustrated in the black dashed line in Figure 6, wherein a non-fundamental capital inflow shock that appreciates the exchange rate puts downward pressure on inflation while also producing a persistent subsequent rise in output. Since interest rate policy transmits principally through aggregate demand, it is only able to move inflation and output in the same direction, and consequently is not ideally suited to addressing the capital flow shock in these circumstances.

**14. Adverse impacts from risk shocks can be addressed using FXI.** A better tool to address temporary inefficient capital flow shocks is a sterilized FX intervention, provided that markets are sufficiently shallow and an appropriate buffer of reserves is available. The red solid line in Figure 6 shows the response to such shocks when the central bank intervenes and leans against the appreciation. FX interventions are modeled as an endogenous reaction to the change in the nominal exchange rate, combined with some gradual mean-reversion to restore the desired ratio of reserves to GDP. As the inflow shock causes the euro to become temporarily cheap, the FX rule calls for euro purchases, with the effect that the lek exchange rate appreciation is greatly reduced. Moreover, the aforementioned output-inflation trade-off is eliminated, suggesting that an easing of interest rate policy coordinated with FXI could realize even greater stabilization benefits. An important sensitivity in this analysis is the strength with which FX policy responds to the exchange rate. A range of estimates can be obtained using the QIPF model, depending to a large degree on which historical intervention data are used. Amongst the alternatives considered, FXI is always an effective tool for addressing risk shocks, even though quantitative differences in the responses may be observed.



## D. Conclusion and Policy Considerations

**15. The exchange rate should continue to play its role as a shock absorber with FXI reserved to moderate the impact of non-fundamental shocks.** The application of the quantitative IPF model to Albania shows that the appreciation of the lek has historically been driven largely by fundamentals, with non-fundamental factors playing a modest role in some episodes. As such, consideration should be given to letting the exchange rate adjust more flexibly and relying on interest rate policy as the primary tool for price stability. In cases of non-fundamental shocks, the scenario analysis suggests that interventions could be beneficial by lowering output and inflation volatility. In doing so, however, the authorities should internalize the potential adverse consequences of FXI (and further reserve accumulation), including on risks to the central bank balance sheet, interest rate transmission, and financial market development.

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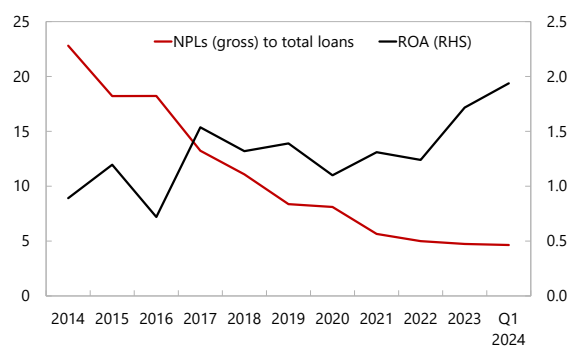
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# STRESS TESTING THE ALBANIAN BANKING SECTOR: A DECADE POST-FSAP<sup>1</sup>

## A. Introduction

**1. Over the past decade, the Albanian banking sector has undergone a remarkable transformation.** From a peak of almost 25 percent in 2014—amid lackluster macroeconomic performance, sizable government arrears, and weak underwriting standards (see the 2014 Financial Sector Assessment Program (FSAP) [Report](#))—non-performing loans (NPLs) declined to just under 5 percent of total loans in Q1 2024, thanks to [financial reforms](#) and a strong macroeconomy. The degree of foreign ownership has declined significantly, with the share of assets owned by foreign banks falling from 90 percent in 2013 to 65 percent in Q1 2024, reducing the system’s vulnerability to contagion risks from external shocks. Banking supervision has also been continually strengthened, with the aim to better align microprudential regulations with international standards and enhance macroprudential tools to safeguard financial stability.<sup>2</sup>

**Figure 1. Albania: Banks’ Non-performing Loans and Profitability**  
(Percent; EOP)



Sources: Bank of Albania and IMF staff calculations.

**2. The sector has weathered a series of recent shocks well.** Despite being confronted with multiple domestic and global shocks in recent years (the 2019 earthquake, pandemic, Russia’s war in Ukraine), the banking sector has remained resilient. Banking sector profitability has been sound and stable with an average return-on-assets of around 1 percent between 2019 and 2022, which rose to an average of 1.7 percent in 2023 and 2024 on the back of higher interest income amid higher monetary policy rates. While heterogeneity exists, banks have remained well-capitalized and liquid, with an average capital adequacy ratio of 19.3 percent in July 2024 (compared to the minimum regulatory requirement of 12 percent) and liquidity ratios above regulatory requirements.

**3. Nevertheless, pockets of vulnerability remain, including some that were identified in the 2014 FSAP Report.** Albania continues to rank among the top in Europe in terms of banks’

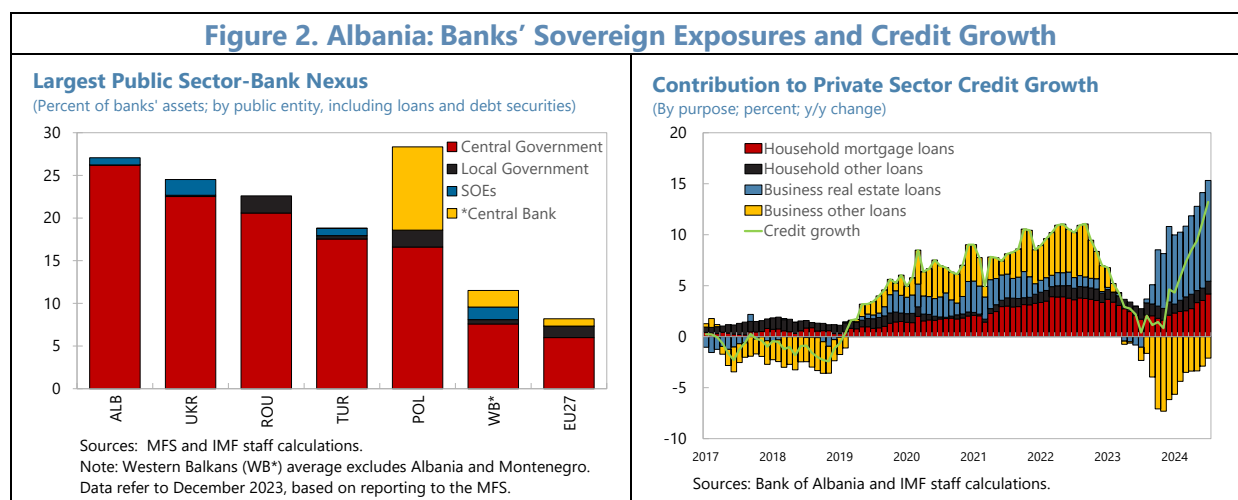
<sup>1</sup> Prepared by Jakree Koosakul and Eugena Topi. The authors are grateful to Anke Weber for providing overall guidance and feedback on the project and to the Bank of Albania for providing granular bank-level data used in the analysis. We would also like to thank David Bartolini, Piyabha Kongsamut, Ying Xu and seminar participants at the Bank of Albania for helpful comments, and Zeju Zhu for excellent research assistance.

<sup>2</sup> See, for example, the discussion in [Bozdo et al \(2023\)](#).

sovereign securities holdings, posing risks stemming from the sovereign-bank nexus<sup>3</sup>. Local-currency government bond and money markets remain illiquid, which could complicate banks' ability to generate liquidity during stress episodes. The economy remains highly euroized, and while unhedged FX lending has declined as a share of total FX loans, two-thirds of unhedged FX loans are concentrated in the real estate sector, which has recently seen rapid credit growth in 2024 and continued price increases.

**4. Against this backdrop, this paper conducts two sets of stress testing exercises to assess the resilience of the Albanian banking sector to shocks.** First, based on the methodology developed by Cihak (2014), banks' *capital adequacy* is examined under stress scenarios covering two broad categories of risks, namely: credit (NPL and large exposure) and market (interest rate and exchange rate). Second, banks' *liquidity resilience* is assessed through an additional exercise that varies key assumptions on the haircuts of liquid assets assumed under the liquidity coverage ratio (LCR) standard.

**5. The rest of the paper proceeds as follows.** Section B presents a brief overview of the Albanian banking sector. Stress test results on banks' capital adequacy and liquidity are provided in Sections C and D, respectively.

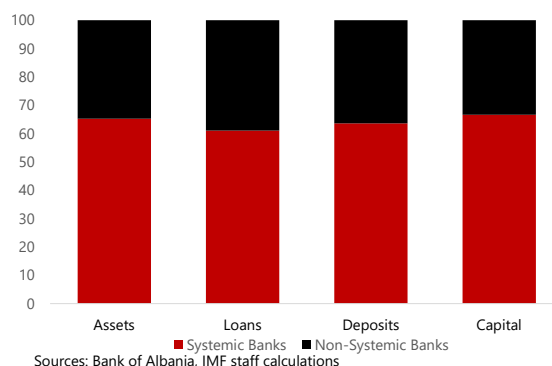


<sup>3</sup> For a discussion of the nexus, see [April 2022 Global Financial Stability Report, Chapter 2](#).

## B. The Albanian Banking Sector: A Quick Glance

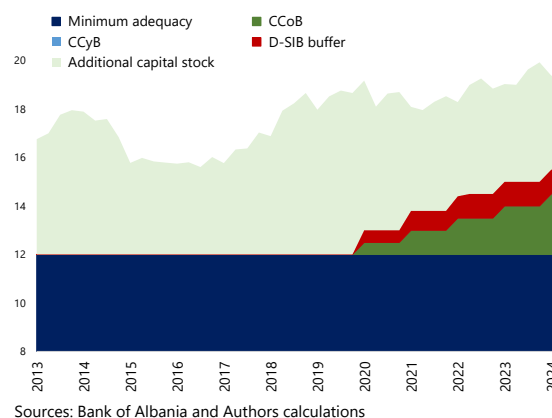
**6. Albania's financial system is predominantly bank-based.** The 11 commercial banks currently own over 90 percent of overall financial sector assets. Following the introduction of macroprudential capital buffers, the Bank of Albania (BoA) introduced a methodology for identifying systemic banks in line with international methodologies. Based on this methodology, four banks are currently identified as domestic systemically important banks (D-SIBs), owning 65 percent of banks' assets and 66 percent of banks' capital. With a Herfindahl-Hirschman Index (HHI) of 1428 based on Q1:2024 banks' total asset data provided by the BoA, the sector is considered competitive.<sup>4</sup>

**Figure 3. Albania: Structure of the Banking Sector, Q1 2024**  
(Percent based on ownership origin)



**7. Banks are subject to a range of regulatory capital and liquidity requirements.** Albanian banks are subject to a minimum Pillar 1 capital requirement of 12 percent (compared to 8 percent in EU countries). In addition, they are required to comply with a capital conservation buffer (2.5 percent in 2024), a buffer for systemically important banks (0.5–1.5 percent for the four D-SIBs), and by June 2025 an additional 0.25 percent from the [recent activation](#) of the

**Figure 4. Albania: Actual Rates of Macroprudential Tools**  
(Percent)

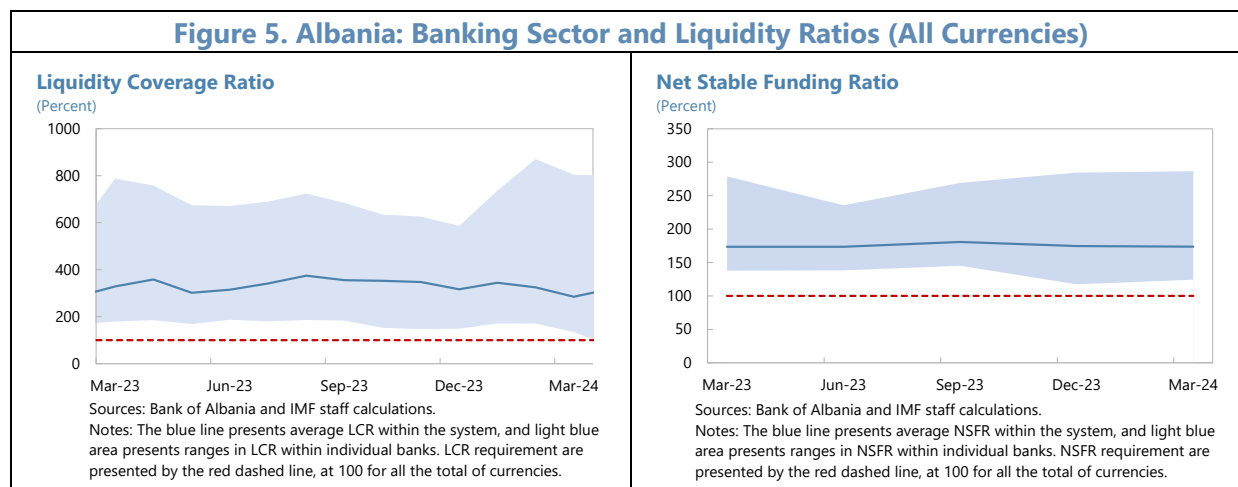


countercyclical buffer (CCyB), as well as large exposure and leverage ratio standards.<sup>5</sup> On the liquidity front, banks are subject to liquidity coverage (LCR) and net stable funding ratio (NSFR)

<sup>4</sup> A common measure of market concentration, the HHI is calculated by squaring the market share of each firm competing in a market and then summing the resulting numbers. A market with an HHI of less than 1,500 is typically considered competitive.

<sup>5</sup> Under the single lending limit regulation, banks' maximum exposure to each counterparty is capped at 20 percent of capital (10 percent for a related party). Under the leverage ratio requirement, banks are required to hold capital equal to at least 5.75 percent of their non-risk-weighted assets (relative to the 3 percent required according to the EU regulation).

requirements, which are also differentiated based on significant currencies, among other requirements.<sup>6</sup> Although heterogeneity exists, most banks are compliant with respect to these requirements.



## C. Stress Testing Banks' Capital Adequacy

**8. A balance-sheet approach to stress testing is employed according to the methodology developed by Cihak (2014).** The approach utilizes bank-by-bank balance sheet data for Q1:2024 to examine the impact of exogenous shocks on individual banks' capital adequacy. A major advantage of this bottom-up approach derives from its focus on granular data, which allows sources of risk at the individual bank level to be captured in a relatively precise manner. While the approach may be less suitable for large and complex financial systems due to computational complexity and data insufficiency, it is suitable in the context of Albania's relatively small and non-complex banking sector.

**9. The stress test covers several key dimensions of risks.** These include credit risks through NPL-related and large exposure channels, and market risks through interest rate and exchange rate channels. Under these scenarios, banks' capital adequacy is assessed vis-à-vis the 12 percent minimum requirement. That is, banks are deemed to experience a capital shortfall only if their capital adequacy ratio (CAR) falls below 12 percent. The relevant horizon for the duration of each shock is one year.

### Credit Risks

**10. The credit risk stress tests, which assess the impact on banks' capital adequacy arising from the default of borrowers on their contractual obligations, consist of two channels.**

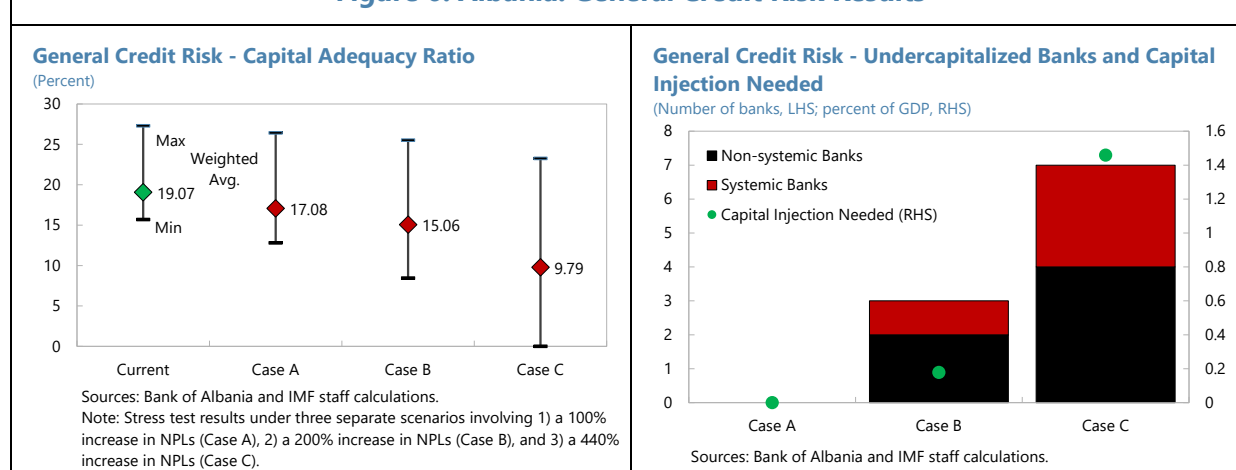
<sup>6</sup> See 2023 Article IV [Report](#) for Albania.



- **General credit risk:** assumes a decline in banks' asset quality leading to a rise in NPLs.<sup>7</sup> The NPL increase is assumed to be distributed within the system in proportion to the current share of individual banks' NPLs. Three stress scenarios with varying degrees of severity are considered, including 1) a baseline stress scenario with a 100-percent increase in NPLs (in line with the assumption in the 2023 Article IV [Report](#)), 2) a more severe stress scenario assuming a 200-percent increase in NPLs, and 3) an extreme scenario of a 440-percent increase, which would bring back the NPL ratio to the historical high level observed in 2014. All scenarios assume a 65-percent provisioning rate, in line with the data.
- **Large exposure risk:** assumes the failure of the largest borrower(s) of each bank. Two scenarios are considered, including 1) a baseline stress scenario assuming the failure of the largest borrower, and 2) a more severe stress scenario involving the failure of top two largest borrowers.

**11. Banks are broadly resilient to general credit shocks, experiencing significant capital shortfalls only under the most extreme scenario.** Under the baseline stress scenario, all banks are found to have sufficient capital to withstand the credit shock, with an average CAR of around 17 percent, well above the minimum requirement. Under the more severe scenario, the average CAR remains above 12 percent. While three banks—including one D-SIB—are found to experience a capital shortfall, the required capital injection is minimal (0.2 percent of GDP). Only under the extreme scenario—where the NPL ratio rises to reach the historic high level in 2014—are multiple banks, including three D-SIBs, found to experience significant capital shortfalls. Under this scenario, the required capital injection is more sizable, at around 1.5 percent of GDP. This scenario is unlikely but demonstrates the significant decline in credit risk faced by banks given the significant fall in NPLs over the past decade.

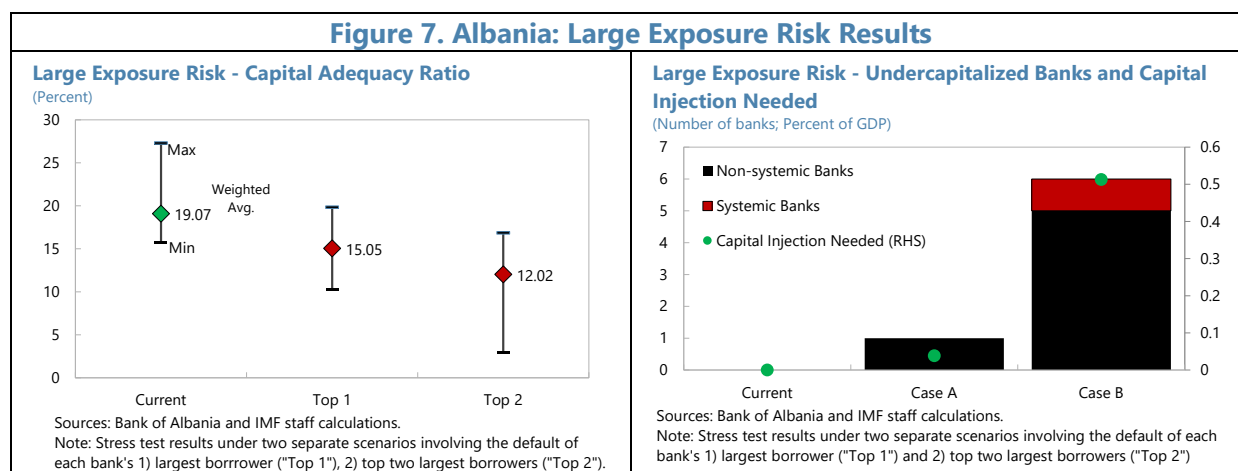
**Figure 6. Albania: General Credit Risk Results**



**12. The banking sector is susceptible to credit risk resulting from large exposures.** One bank is found to experience a capital shortfall in the scenario involving the default of the largest borrower, with system-wide CAR dropping from around 19 percent to 15 percent. The number of

<sup>7</sup> The test is agnostic to the underlying cause of the decline, but this could for example arise from a protracted macroeconomic slowdown or recession.

banks with capital shortfalls increases to six, including one D-SIB, if the two largest borrowers default, which also sees a fall of the system-wide CAR almost below 12 percent. The capital injection needed under the latter scenario amounts to 0.5 percent of GDP.



## Market Risks

### 13. The market risk stress tests assess the banking sector's resilience to changes in interest and exchange rates.

- Interest rate risk:** consists of two channels.<sup>8</sup> First, a "flow" channel examines the changes in interest income and interest expenses resulting from the "gap" between the flow of interest on the holdings of interest-sensitive assets and liabilities. Second, a "stock" channel assesses the impact of interest changes on the value of marked-to-market (MtM) bonds held by the commercial banks. It is assumed, based on the information provided by the BoA, that 25 percent of bonds in banks' portfolio are MtM, with the rest held-to-maturity (HtM).<sup>9</sup> Two scenarios are considered, including 1) a baseline stress scenario assuming a 150-basis point (bps) increase in interest rate, and 2) a more extreme scenario assuming a 250-bps increase.
- Exchange rate risk:** also arises through two channels. First, a direct channel examines the impact of changes in the exchange rate on the local currency value of the net FX position of banks. Second, an indirect channel assesses the extent to which exchange rate movements influence the creditworthiness and ability to repay of corporates and households, and therefore banks' NPLs. This can arise from the impact of FX movements on firms' competitiveness, or more directly through their impact on firms' net open positions in foreign currencies. Two scenarios are considered, including 1) a baseline stress scenario assuming a 25-percent depreciation of the lek vis-à-vis the euro (which would bring the exchange rate roughly at the pandemic-era level),

<sup>8</sup> It may be the case that an increase in interest rates may also affect the creditworthiness and/or the ability to repay of corporates and households, thereby increasing banks' NPLs. This indirect channel is not captured in the current stress test. As such, the results should be viewed as lower-bound estimates.

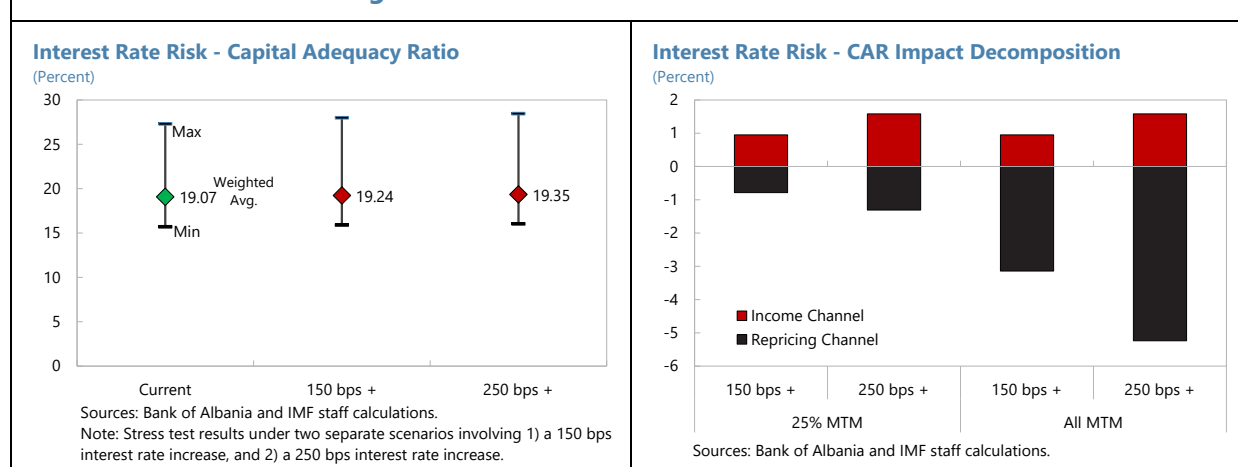
<sup>9</sup> In principle, the impact of an interest rate change on the bond market value is a function of the duration of the bonds held. This information is provided by the BoA.

and 2) a more extreme scenario assuming a 40-percent depreciation (which would bring the exchange rate to its pre-pandemic level).

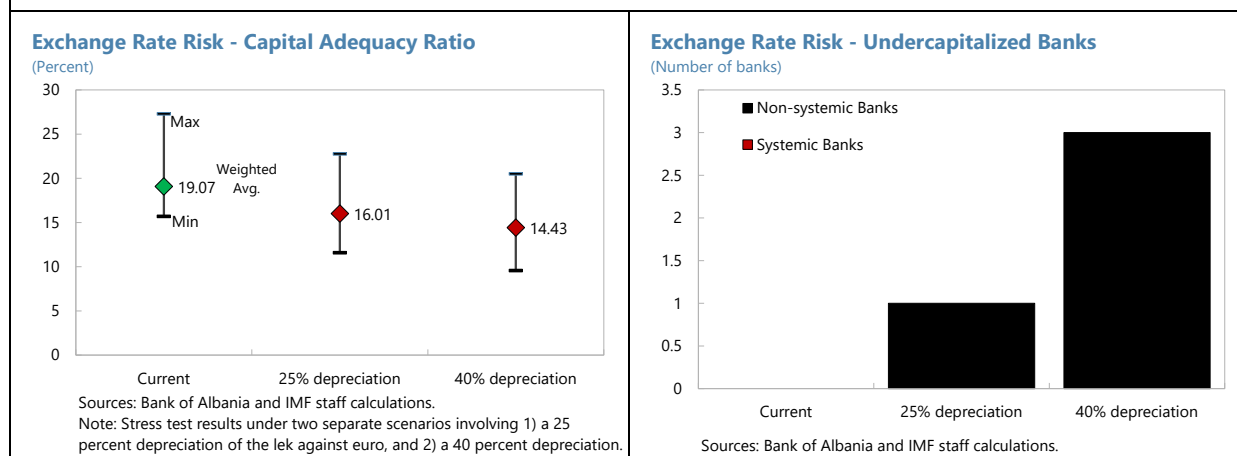
**14. Banks are resilient to interest rate shocks, although vulnerability emerges if the baseline MtM assumption is relaxed.**

- Under both baseline and more extreme scenarios, banks' capital ratio is found to be little affected by interest rate shocks. This finding arises as the two channels appear to work in opposite directions. On the one hand, due to banks generally having more interest-sensitive assets than interest-sensitive liabilities, they appear to *benefit* from an interest rate increase. On the other hand, an interest rate rise leads to a fall in the MtM value of bonds in banks' portfolios, reducing their capital ratio. Under the baseline assumption that only 25 percent of banks' bond portfolio is MtM, the quantitative effects of the two channels almost completely offset each other.
- In practice, there may be circumstances (for example, during a liquidity crisis) in which banks may be forced to sell bonds beyond the intended MtM portion. In this spirit, if all bonds in banks' portfolio are instead assumed to be MtM, there is a sizable negative effect coming from the repricing channel, such that the overall impact of an interest rate rise is negative and sizable. All banks remain capitalized above the minimum requirement under the baseline scenario of a 150-bps increase, while two banks (including one D-SIB) are found to experience a mild shortfall despite the system-wide CAR remaining at 15.4 percent.

**Figure 8. Albania: Interest Rate Risk Results**



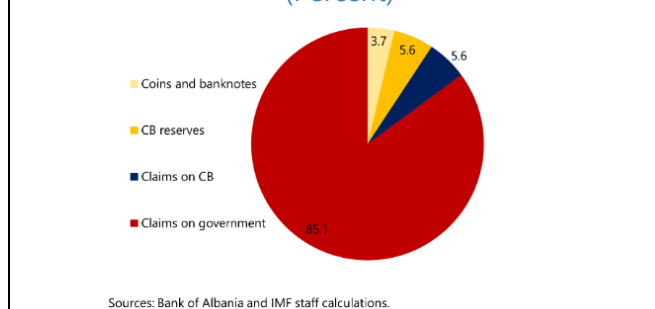
**15. There is some vulnerability to exchange rate shocks.** Under the baseline scenario of a 25-percent lek depreciation against the euro, the system-wide CAR drops by around 3 percentage points with one bank falling short of the required capital ratio, although it remains well above the 12-percent requirement. In the more extreme scenario of a 40-percent depreciation, the system-wide CAR remains above the minimum requirement, with three banks experiencing capital shortfalls, although none of such banks is systemically important. Decomposing the total impact, the direct channel appears to play a slightly more significant role, responsible for around 60 percent of the reduction in the system-wide capital ratio.

**Figure 9. Albania: Exchange Rate Risk Results**

## D. Stress Testing Banks' Liquidity Resilience

**16. With the aim of promoting banks' short-term liquidity resilience, the LCR was introduced as a key reform under Basel III following the global financial crisis.** The standard seeks to ensure that banks have an adequate stock of unencumbered high-quality liquid assets (HQLAs) to meet their liquidity needs for a 30-calendar day liquidity stress scenario. Crucial in the definition of securities that qualify as HQLA is that such assets can be converted into cash easily and immediately, with minimal price impact, in secondary markets to meet banks' liquidity needs. This section focuses on banks' LCR in lek, as foreign-currency-denominated HQLAs (for example, euro bonds) are deemed to be appropriately liquid.<sup>10</sup>

**17. Albanian government securities are assumed to be an important source of liquidity under the LCR and constitute a primary source of lek liquidity for Albanian banks.** For the purpose of calculating the amount of HQLA, each asset is assigned a haircut value, to be applied to its notional amount to arrive at the adjusted amount that is considered HQLA. Albanian government securities are treated favorably, with a haircut of 0 percent, in the same category as coins, banknotes, and qualifying central bank reserves.<sup>11</sup> Due to large holdings of Albanian government bonds amid a lack of other financial instruments, such bonds constitute the lion's share of Albanian banks' HQLA in lek.

**Figure 10. Albania: Composition of HQLA in Lek (Percent)**

<sup>10</sup> Consistent with international best practices, Albanian banks are required to maintain their LCR above 100 percent on an all-currency and all-significant-currency basis. In addition, they are also required to monitor LCR in lek and in each of the significant foreign currencies.

<sup>11</sup> In line with international standards (see, for example, [BCBS 2013](#)).

**18. This section examines the sensitivity of banks' assumed liquidity buffers under the LCR to alternative assumptions on government bond liquidity.**

- In the absence of a liquid secondary bond market in Albania, banks' ability to generate lek liquidity through the sale of their Albanian sovereign securities with minimal price impact (as assumed under the LCR) may not hold in practice. While the BoA's liquidity facility—which allows banks to pledge their liquid assets in exchange for short-term liquidity—helps alleviate liquidity pressures to a large extent, the existence of haircuts and margins necessary to protect the BoA from credit risks still implies lower liquidity than suggested by banks' LCR values. In this light, stress tests are conducted to examine the effects of altering the assumption on the government bond haircut on banks' liquidity buffers under the LCR.
- Two scenarios are considered, namely 1) a scenario assuming banks' access to the BoA's facility, with an assumed haircut of 20 percent, and 2) a scenario involving no access to the facility, with a haircut of 90 percent. The latter scenario would arise if the bank in question is experiencing both liquidity and solvency issues at the same time, making the liquidity facility inaccessible. In this scenario, we assume that the bank would need to liquidate its securities in the secondary market, subject to a 90-percent haircut, given the market's lack of liquidity.<sup>12</sup> The analysis is based on the March 2024 LCR dataset provided by the BoA.

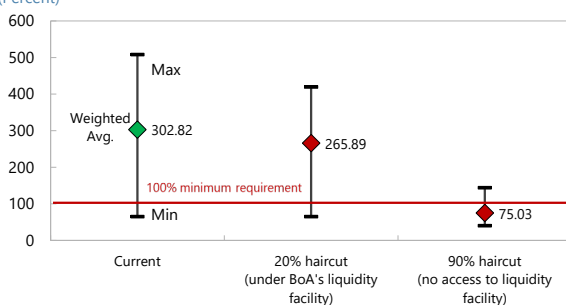
**19. Banks' liquidity resilience depends crucially on access to the BoA's facility, absent a liquid secondary bond market.**

- Under the current LCR assumption of a zero haircut, almost all banks (except for one outlier) currently maintain a very comfortable LCR in lek well above 100 percent, with the system-weighted average of 303 percent. Under the assumption of a 20-percent haircut (with access to the BoA's facility), the average falls marginally to 266 percent, and no additional bank is found to experience a liquidity shortfall.
- Without access to the BoA's facility, however, banks' ability to meet net cash outflows is greatly compromised, with the system-wide average dropping to 75 percent, below the minimum requirement. In such a scenario, eight banks are found to experience a liquidity shortfall, including all four D-SIBs. These results suggest that banks' ability to meet liquidity needs under stress depends crucially on access to the BoA's facility. Going forward, continued efforts to develop the secondary bond market as well as the secured money market would be important for improving market participants' resilience to liquidity risks through market-based mechanisms.

<sup>12</sup> While a 90-percent haircut may appear extreme, the resulting amount that is assumed to be liquidated under the scenario remains well above the actual 30-day turnover of the Albanian secondary government bond market. The monthly bond market turnover stands at around 100 million lek, against the median amount of 2,738 million lek that is assumed to be sold under the 90-percent haircut scenario. Therefore, the amount of expected liquidity shortfall may still be considered as a lower-bound estimate.

**Figure 11. Albania: Liquidity Risk Results****Liquidity Coverage Ratio Under Stress Scenarios**

(Percent)

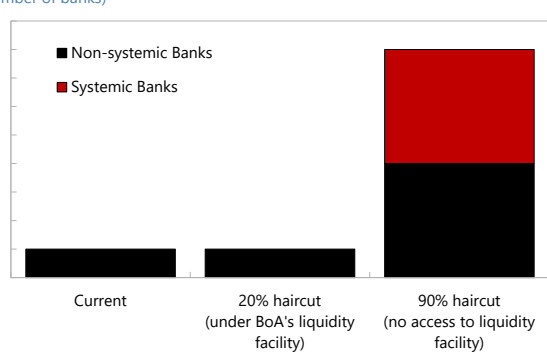


Sources: Bank of Albania and IMF staff calculations.

Note: Stress test results under two separate scenarios assuming 1) 20% haircut on lek-denominated sovereign government bonds (under BoA's liquidity facility), and 2) 90% haircut (without access to BoA's facility). The computed LCR refers to the LCR in lek.

**Liquidity Risk - Illiquid Banks**

(Number of banks)



Sources: Bank of Albania and IMF staff calculations.

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