LAPSE OF TIME

SM/20/123

July 17, 2020

To: Members of the Executive Board

From: The Secretary

Subject: **Algeria—Financial System Stability Assessment**

Board Action:	Executive Directors' **consideration** on a lapse of time basis
Deadline to Request Board Meeting:	**Wednesday, July 29, 2020** **12:00 (noon)**
Proposed Decision Deemed Approved:	Friday, July 31, 2020
Provisional Board Meeting Date: (if requested)	Friday, July 31, 2020
Proposed Decision:	Page 25
Additional Information:	The FSSA for Algeria is being issued for discussion on a stand-alone basis because the mission work was concluded prior to the outbreak of the pandemic, so the FSSA has been completed, as envisaged in Extension of Consultation Cycles Due to Covid-19 Pandemic (SM/20/89).
Publication:	Yes*
Questions:	Mr. Walsh, MCM (ext. 35929)
Document Transmittal in the Absence of an Objection and in accordance with Board policy:	After Board Consideration—Arab Monetary Fund, African Development Bank, European Investment Bank, Food and Agriculture Organization, Islamic Development Bank, United Nations Development Programme, World Trade Organization

***Unless an objection from the authorities is received prior to the conclusion of the Board's consideration, the document will be published.**

INTERNATIONAL MONETARY FUND

ALGERIA

FINANCIAL SYSTEM STABILITY ASSESSMENT

July 16, 2020

KEY ISSUES

COVID-19 pandemic: Much of the Financial Sector Assessment Program (FSAP) work was conducted prior to the COVID-19 pandemic. Given the FSAP's focus on vulnerabilities and policy frameworks, many of the FSAP's findings and recommendations remain pertinent. The stress tests in this report account for the effects of COVID-19 in the baseline outlook and include a more adverse scenario that assumes the outbreak lasts longer than currently anticipated.

Context: Prior to the pandemic, credit growth had been rapid, deficit monetization had raised macro risks, and international reserves had fallen substantially. Government interventions in the economy are pervasive and funded by hydrocarbon revenue, rendering Algeria highly vulnerable to exogenous shocks and leaving it with limited policy space to absorb them.

Findings: The Bank of Algeria (BA) has managed reserve requirements to address large liquidity shifts from hydrocarbon prices. Risk analysis shows that the COVID-19 shock is likely to leave some banks undercapitalized, and if prolonged, could result in systemwide undercapitalization. Financial supervisors lack independence and willingness to act, and risk management has been poor overall. Although supervisory rules appear adequate, a large stock of legacy NPLs was potentially underprovisioned. Liquidity management is underdeveloped. No progress on the financial safety net had been made since the 2014 FSAP. Subsidies administered via the financial sector should be reformed and inclusive finance and digital payments better developed.

Policies: Supervisors should meet regularly, and the Banking Commission should ensure all banks abide by prudential and AML/CFT regulations, issuing sanctions where warranted. The regulatory framework should be strengthened, notably on bank governance internal controls, and politically exposed persons (PEPs). Better credit risk management is needed, and NPL provisioning should be better monitored and enforced. Interbank rate fluctuations should be limited within a mid-corridor system and the money market better developed. A crisis management framework, including a special resolution framework, should be introduced, and mechanisms for systemic risk oversight restarted. Better corporate governance and reform of subsidy programs, along with better credit risk supervision, would help contain sovereign-bank linkages.

Approved By

James Morsink and Taline Koranchelian

Prepared By

Monetary and Capital Markets Department

This report is based on the work of the Financial Sector Assessment Program (FSAP) mission that visited Algeria in September 2019.

- The FSAP team was led by James P. Walsh (IMF) and Caroline Cerutti (World Bank) and included Jad Khallouf (deputy chief), Mariam El-Hamiani, Peter Löhmus, William Oman, Miklos Vari (all IMF), Ibrahim Matta and Jean-Marie Weck (IMF experts), Philippe Aguera (deputy chief), Jean-Michel Lobet, Dorothée Delort, Tatiana Alonso-Gispert, Tanjit Sandhu Kaur, Franz le Lesle, and Olivier Hassler (World Bank). The mission met with former Bank of Algeria Governor Ammar Hiouani, Vice Governors Benbelkacem and Maherzi, and former Minister of Finance Mohamed Loukal in that capacity and previously as Governor of the Bank of Algeria. Following recent changes among senior officials, the mission reached out with its recommendations to the Minister of Finance Aïmene Benabderrahmane in his former capacity as Governor of the Bank of Algeria.

- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs.

- This report was prepared by James P. Walsh and Jad Khallouf.

CONTENTS

Glossary

AML/CFT	Anti-Money Laundering and Combating the Financing of Terrorism
BA	Bank of Algeria
CAMELS	Capital, Assets, Management, Earnings, Liquidity, and Sensitivity to Market Risk
CB	Banking Commission
CMC	Monetary and Credit Council
DG	General Director
DGIG	General Directorate for the General Inspectorate
ELA	Emergency Liquidity Assistance
FATF	Financial Action Task Force
FGDB	Bank Deposit Guarantee Fund
FSAP	Financial Sector Assessment Program
GDP	Gross Domestic Product
MF	Monetary Financing
MOF	Ministry of Finance
ML/TF	Money Laundering and Terrorism Financing
NLP	Net Liquidity Position
PEPs	Politically Exposed Persons
SMEs	Small and Medium-Sized Enterprises
SOBs	State-Owned Banks
SOEs	State-Owned Enterprises

EXECUTIVE SUMMARY

The mission work of the Financial Sector Assessment Program (FSAP) was conducted prior to the COVID-19 pandemic. Given the FSAP's focus on vulnerabilities and policy frameworks, many of the FSAP's findings and recommendations remain pertinent. In addition to an assessment of bank liquidity and solvency under the current outlook, this report also includes a scenario to quantify the possible impact of a prolonged COVID-19 shock on bank solvency.

Even before the pandemic, the fall in oil prices that began in 2014 had had a significant impact on an economy heavily dependent on hydrocarbons and dominated by the public sector. The government plays a central role in resource allocation, especially through subsidies, and state-owned banks and public enterprises dominate their respective markets. Hydrocarbon exports and associated revenues support this dense web of financial interactions. The fall in government revenue had led to arrears in government payments to the private sector and was partly covered by direct monetary financing by the Bank of Algeria (BA) from October 2017 through January 2019. This accelerated the fall in the BA's international reserves from a level of more than 33 months of imports at end-2014 to 13.5 months in June 2019. Between 2014 and 2018, lending to the economy increased by 50 percent while NPLs rose from 9.2 to 13 percent and the provisioning rate declined from 65.2 to 50.2 percent. Since 2015, the government has recapitalized several state-owned banks or bought back some of their loans to state-owned enterprises (SOE) to bolster bank solvency.

The risk assessment reveals potential capital and liquidity vulnerabilities, especially if the COVID-19 pandemic is prolonged. Prior to the COVID-19 crisis, credit growth had been rapid and the stock of potentially under-provisioned NPLs was substantial. Under the current baseline, which assumes a prolonged period of very low hydrocarbon prices, four banks would not be able to meet minimum capital requirements, though recapitalization costs are not large. However, if the COVID-19 pandemic were to continue, with slower growth and greater external pressures, capital losses could be much larger. On the other hand, risks stemming from interest rates or FX mismatches appear minor.

Supervision is weak. The Banking Commission (CB) had not imposed sanctions in the preceding five years, despite some banks operating outside prudential limits. The independence of supervisors should be ensured, and sufficient resources allocated to comply with their missions. Now that key job vacancies have been filled, the Monetary and Credit Council and the CB should ensure ongoing normal operation of banking regulation and supervision, including by tightening monitoring and streamlining organization, and the CB should ensure that all banks respect prudential and AML/CFT rules. The BA should pursue its efforts to strengthen the regulatory framework, with the adoption of the regulations that have been drawn up on governance, internal control, related parties, and prudential consolidation, along with new legal and regulatory requirements regarding PEPs. Supervision of systemic risks has been lacking; the Financial Stability Committee should be reconvened to assess these risks and the macroprudential capacity of the BA developed.

Improving the management of credit and liquidity risks at banks is essential. Stress tests indicated that the COVID-19 shock may necessitate recapitalization; particularly if it is prolonged. Should this occur, banks should be required to submit feasible capital restoration plans providing for gradual but timely capital augmentation. Better risk management and provisioning would help curtail the growth of potentially under-provisioned exposures; beyond that it would be sensible to undertake a comprehensive review of credit quality and of associated provisioning levels. Banks should also better monitor potential liquidity risks, and supervisors should ensure permanent compliance with prudential requirements. Going forward, stress testing capacity should be strengthened at the BA and the CB, by ensuring better data quality, both macroeconomic and supervisory, and improving modeling capacity.

Substantial legal and regulatory reforms have been undertaken to strengthen the AML/CFT framework, but important shortcomings remain. The frameworks for PEPs should be brought in line with international standards, and tools for the determination and verification of beneficial owners of legal entity clients should be developed. Measures aimed at shrinking the informal economy by restricting the documentation that may be obtained as part of the customer due diligence process impede the ability of financial institutions to understand their customers and identify suspicious activity. These should be addressed, and Algeria should undertake a national ML/TF risk assessment.

Swings in systemic liquidity in recent years underscore the importance of improving management in this area. The fall in hydrocarbon prices after 2014 and the use of monetary finance after 2017 led to alternating surpluses and deficits of systemic liquidity in recent years. Liquidity management at the bank level would be facilitated by keeping the interbank market rate within a mid-corridor system centered on the BA policy rate. Reforms aimed at encouraging more use of repos, CDs, and commercial paper would further help stabilize markets, as would more utilization of structural open market operations.

Developing the crisis management and financial safety nets framework is a priority, especially in the current context. While supervisors collect high-frequency data, these should be developed into an effective early warning system. The Bank Deposit Guarantee Fund should be strengthened to facilitate compensation and boost depositor confidence. It would be appropriate to establish a specific framework for emergency liquidity assistance (ELA) to the banks, distinct from the standard liquidity framework, and to put in place a special regime for bank resolution.

Various reforms to the financial sector would help boost inclusive growth. The COVID-19 pandemic should be an opportunity to introduce reforms to make the system more resilient and inclusive.

- The **state-owned banks** should be restructured to enable them to operate on criteria of profitability, with the financing of development activities transferred to dedicated institutions. It is vital to strengthen the role, powers, and independence of the boards of directors and of the internal control mechanisms. It would be desirable to also create an independent and professional public agency to undertake the main shareholder duties of the State.

- **Government subsidized credit programs run by the state-owned banks** are inefficient and costly. Housing subsidies should be better designed and targeted, and subsidized lending to SMEs should be replaced by a more market-based allocation of credit, the development of a regulatory framework for private microfinance, and a far-reaching reform of the public guarantee mechanisms for directed credit schemes.

- **Digital payments** are underdeveloped, reducing household resilience during the pandemic. The regulatory framework should evolve to establish a National Payments Council as a coordination mechanism for reform; allow nonbank institutions to offer payment services and allow agency banking; and strengthen consumer protection. The supervisory function of the payments system should be strengthened to allow the Bank of Algeria to play a catalytic role in its modernization. Lastly, a strategy for the digitization of government payments should be adopted.

Table 1. Algeria: FSAP Key Recommendations

Para.	Recommendation	Priority
	Banking Supervision	
18	Ensure the regular and independent operation of the Monetary and Credit Council and the Banking Commission.	I
20	Continue enforcing sound prudential and loan loss provisioning standards and, in case of capital shortfalls, require banks to submit a feasible capital restoration plan that provides for capital augmentation in a gradual but timely manner.	I
20	Tighten bank supervisory monitoring – especially at public banks – and ensure prudential rules, notably on NPLs and risk exposure limits, are respected.	I
20	Conduct a detailed assessment of the quality of loan portfolios at state-owned banks (examination of assets, guarantees, and provisions), and of the process to write off NPLs.	I
26,30	Fully implement the risk-based approach to AML/CFT supervision and bring Algeria's politically exposed persons (PEPs) framework into compliance with the FATF Standard, including by covering domestic PEPs.	I
	Crisis Management	
32	Establish a special bank resolution regime, entrusted to an authority that is autonomous and with independent resources.	MT
33	Develop a set of Early Warning Indicators to be connected to banks' recovery plans	ST
33	Establish recovery planning requirements for all banks operating in Algeria	MT
	Systemic Liquidity	
34	Eliminate the discount window and establish a framework for emergency liquidity assistance (ELA) that is distinct from the standard liquidity management framework.	MT
38	Move toward a restricted interest rate mid-corridor system centered on the BA policy rate and bounded by the BA marginal lending rate and the BA rate on remunerated deposits.	ST
39	Use structural open market operations, using outright sales of government securities, to sterilize structural liquidity surpluses.	ST
40	Introduce enabling reforms to support systemic liquidity management, including rules for government securities, repos, CDs, and commercial paper markets.	ST
	Strengthening of the Governance of State-Owned Banks	
41	Elaborate and adopt a state-owned bank ownership policy, with a professional unit responsible for managing the government's holdings.	MT
41	Stop the use of the state-owned banks for development programs, allow them to implement an effective business strategy, and ensure a controlled phasing-out of the government from their capital.	ST
	Optimization of Public Programs for Credit Support	
41	Make housing loan subsidies variable based on the effort ratio, limit them in time, and make them conditional on prior savings.	ST
41	Separate the *dispositifs d'aides* (credit subsidy mechanisms ANSEJ, ANGEM, and CNAC) from the public banks, and assess whether it is appropriate to maintain them as business development services for microenterprises.	MT
41	Reform the supervision and regulatory framework of the national payments system; allow non-bank institutions to offer payments services; allow agency banking; strengthen consumer protection; and make the payment system secure.	ST

I = immediate; ST = short term (0-6 months); MT = medium-term (6 months – 2 years)

MACRO-FINANCIAL CONTEXT

A. Macro-Financial Context

1. **Algeria's economy and financial system are dominated by the State to an unusual degree, with widespread interventions financed by hydrocarbon revenue.** State-owned banks (SOBs) dominate the financial system and half their lending is to public sector entities. The SOBs also implement a wide range of subsidy programs aimed at government priorities. Declining credit quality is thus linked to fiscal risks, and with banks also state-owned, recapitalization (or SOE support) would further add to fiscal pressures. These wide-ranging interventions are funded by tax revenues from hydrocarbons, which constitute 95 percent of exports.

2. **The COVID-19 pandemic follows a period of significant economic challenges and political and economic uncertainty.** The collapse of oil prices beginning in the third quarter of 2014 widened budget deficits, which were covered by substantial monetary financing (MF) from the BA to the government and public sector arrears. While inflation has remained under control, the BA's international reserves fell from a level of more than 33 months of imports at end-2014 to 13.5 months in February 2020. MF also reversed the structural liquidity position of the banking system from deficit to surplus. In the runup to the 2019 Presidential elections, the potential for a complicated transition and concurrent investigations into management at some corporations appears to have impaired economic growth and raised credit risks. Banks thus entered the post-election period with weaker loan portfolio quality.

Box 1. The Authorities' Response to COVID-19 To Date

Containment measures: Algeria's borders are closed. There is a nationwide curfew from 7pm to 7am, which is broader in some areas. All public gatherings, including religious ones, have been cancelled.

Fiscal and social sector policies: Tax deadlines have been extended for both filing and payments. Half of non-essential staff at government agencies have been placed on paid leave. Salaries for health care workers are being increased and a one-off payment to poor households for Ramadan were approved, but the government aims to reduce current spending overall by 30 percent to move toward sustainability. A supplementary budget law in June cut budgeted spending by 6 percent for 2020 (or 2.2 percent of GDP), but the overall fiscal deficit is forecast at 15.5 percent of GDP for 2020, compared to 11.4 percent in 2019, due to lower revenues and crisis-related measures

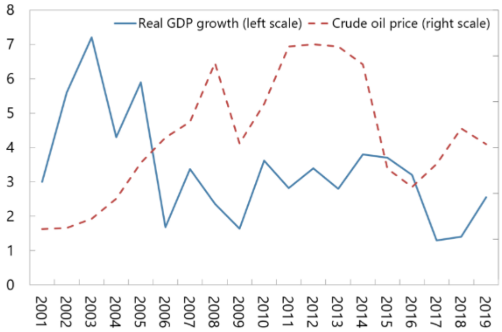
Financial sector policies: In April 2020, the BA cut the reserve requirement from 10 to 6 percent to support systemic liquidity in the face of the severe decline in hydrocarbon prices in mid-March. The BA also authorized banks to reschedule client loan servicing payments, as they deem appropriate without having to classify these in NPLs. In addition, the BA eased prudential requirements on the liquidity ratio and on the capital conservation buffer on a temporary basis during the crisis.

3. **The pandemic and the associated oil shock have further reduced fiscal revenue while suppressing domestic and external demand.** Turmoil in the oil market and the global recession

Figure 1. Algeria: Pre-COVID-19 Macrofinancial Context

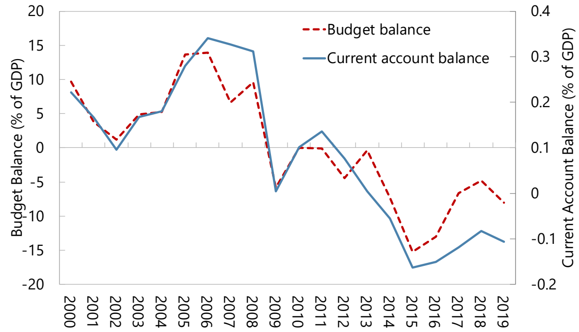
Lower oil prices since 2015 have weighed on GDP growth....

Real GDP Growth vs. Crude Oil Price
(GDP growth in percent)



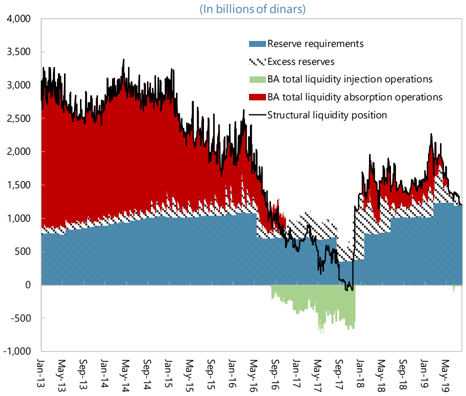
...as well as harming both the fiscal and external positions.

Current Account and Budget Balance as a share of GDP
(In percent)



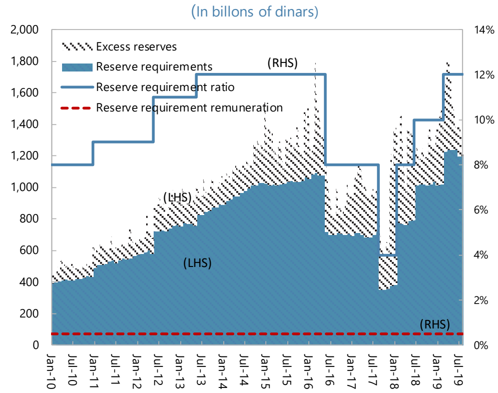
Reserves have been falling, but overall liquidity began to rise as deficit monetization began in 2018...

Structural Liquidity Position of the Banking System
(In billions of dinars)



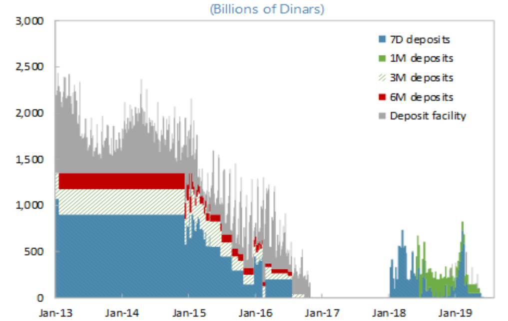
...which has partly been absorbed via higher reserve requirements.

Reserve Requirements and Excess Reserves
(In billons of dinars)



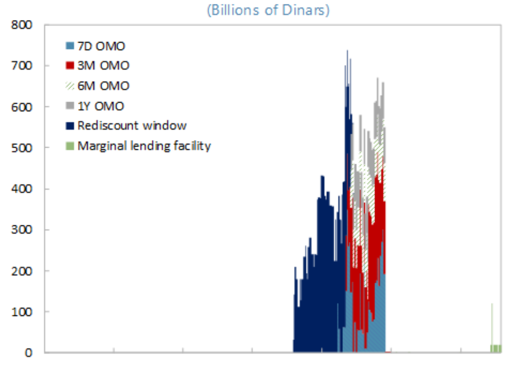
Liquidity absorption tools being used are shorter-term than during the previous episode of liquidity surplus...

BA Liquidity Absorption Operations Outstanding Volume
(Billions of Dinars)



...while liquidity injections were introduced during the interim period of liquidity deficit.

BA Liquidity Injection Operations Outstanding Volumes
(Billions of Dinars)



Sources: Bank of Algeria; and IMF, World Economic Outlook database have greatly reduced hydrocarbon exports, which fell by more than a quarter in value terms in the year to 2020Q1 and probably fell further in Q2. As in other countries, containment measures have had a negative impact on domestic economic activity, though inflation has so far remained stable (Box 1). Fiscal policy was already overstretched by MF, and monetary policy space reduced by falling reserves.

B. Structure and Performance of the Financial System

4. The Algerian financial system is dominated by SOBs. While the system has grown and some new markets, such as the interbank market, have developed, the financial structure has not changed dramatically since the last FSAP. At end-2018 the assets of the financial and banking system came respectively to 82 and 73 percent of GDP. The banking sector includes six SOBs accounting for 86 percent of system-wide loans. The 14 private banks finance mainly large private businesses and trade finance. Eight finance companies provide investment loans, of which five undertake financial leasing and represent less than 1 percent of total credit. A conventional microfinance sector is nonexistent, replaced by programs managed by public agencies providing subsidized loans to microenterprises.

5. The nonbank financial sector is small. Stock market capitalization represents less than 1 percent of GDP, with insurance companies and pension funds also small. Bond markets are dominated by government bonds, which represent 8.5 percent of GDP but without benchmarks and nonbank institutional investors, fixed income market growth has been slow. There exists one mutual fund, with assets of 177 million dinars (<0.1 percent of GDP). With SOBs dominating lending to SOEs and subsidized credit schemes, private banks focus on large companies and trade finance.

6. Bank asset quality began to deteriorate in 2015 and liquidity management is poor (Annex III). Nonperforming loans – estimated at 12.6 percent of total loans at end-2018, according to available data - have increased at public and private banks. Depressed hydrocarbon prices, the economic downturn, and late government payments to suppliers have been the main drivers, but poor risk management at the banks has worsened the situation. Solvency ratios appear high following recapitalization, via restructurings and guarantees among other tools, of some banks. However, capital may be overstated in some cases as banks have legacy NPLs on their books that may be inadequately provisioned.[1] Also, 80 percent of SOB loans are medium- and long-term, while 60 percent of deposits are term deposits which rise and fall with hydrocarbon prices.

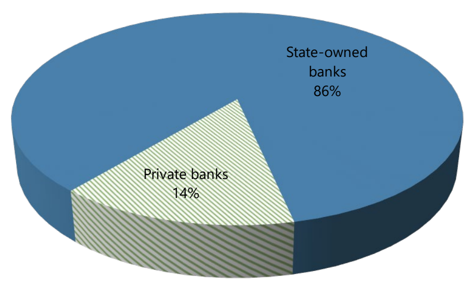
7. Several key reforms have been implemented since the last FSAP, but much has not been done. Prudential regulations have been updated, and changes to the framework underlying capital requirements have been proposed but not yet adopted. The authorities have begun to work

[1] An Algerian bank regulation makes it effectively impossible to collect on a loan which has been written off. For this reason, banks tend to hold legacy NPLs on their balance sheets. Supervisory rules require full provisioning of loans overdue for more than two years. However, it appears that not all banks are in compliance with this regulation, especially in some subsidized loan categories.

Figure 2. Algeria: Financial Structure and Performance

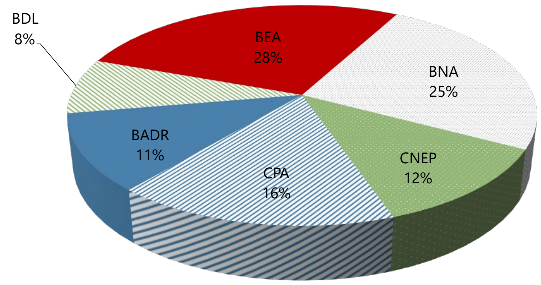
SOBs dominate the banking system…

Total Banking System Assets by Bank Type
(In percent, as of 2018Q2)



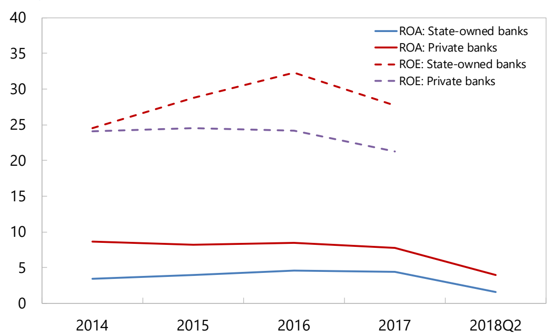
…without a single bank being completely dominant.

Algerian State-Owned Banks Total Assets Breakdown
(In percent, as of 2018Q2)



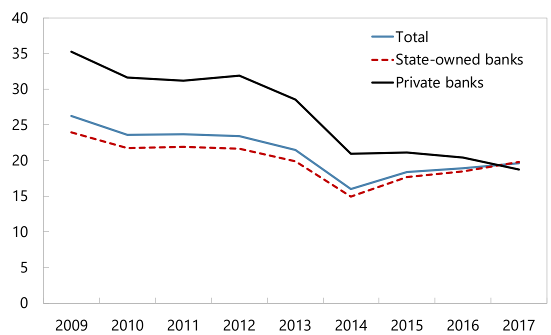
Banks have remained broadly profitable…

Return on Assets (ROA) and Return on Equity (ROE) 1/
(In percent)



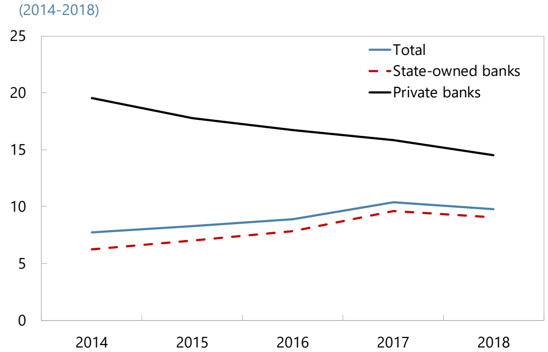
…though the weaker capital positions of SOBs raise their SOE above that of private counterparts.

Capital Adequacy Ratio
(2009-2017)



However, this difference is declining along with the overall level of bank capital…

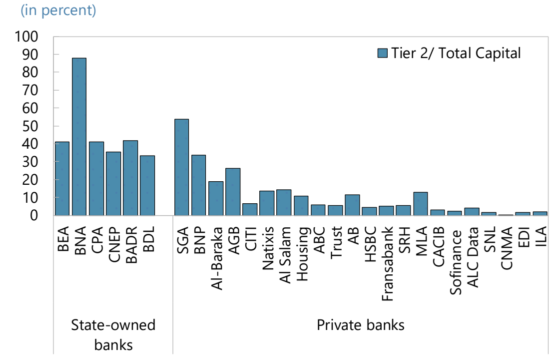
Leverage Ratio
(2014-2018)



Notes: Leverage Ratio is calculated by total capital divided by total asset

…and Tier 2 instruments are important at SOBs.

Bank Tier 2 Capital as a share of Total Capital
(in percent)



Source: Bank of Algeria.

1/ 2018Q2 data are preliminary and subject to revision.

with a stress testing model, though gaps in macro and supervisory data have slowed their capacity development. Interbank transactions grew as liquidity dried up with the decline in oil prices, and the authorities have shown flexibility in managing these changes in liquidity. While the ceiling on insured deposits has been raised, no significant changes have been made toward introducing a resolution regime, and a macroprudential committee established in 2014 has not recently met.

Table 2. Algeria: Structure of the Financial Sector[1]

Sector Assets	Percent of GDP
Credit to GDP	82
Credit to the Private Sector	25
Banking Sector Assets	73
-State-owned banks Assets	63
-Private Banks Assets	10
-Other financial corporations	0.5
Capital Markets	
-Stock Market Capitalization	0.2
- Corporate Bonds Outstanding	0.5
-Sovereign Bond Outstanding	8.5
-Other bonds[2]	9
Insurance Sector Assets	<1
Pensions Sector Assets	<1
Revenue Regulation Fund	0

Sources: Bank of Algeria; AFDB database; Algérie Clearing; Algeria Stock Exchange; Middle East Insurance Review; World Bank note "Marchés de Capitaux en Algérie: Options de Réforme pour le Développement de Marchés Dynamiques," May 2018.

[1] Data as of 2018, except capital market (September 2019), insurance (2017) and pensions (2015).

[2] Other bonds include less fungible securities to consolidate NPLs of SOBs or to recapitalize public enterprises.

VULNERABILITIES AND STRESS TESTS

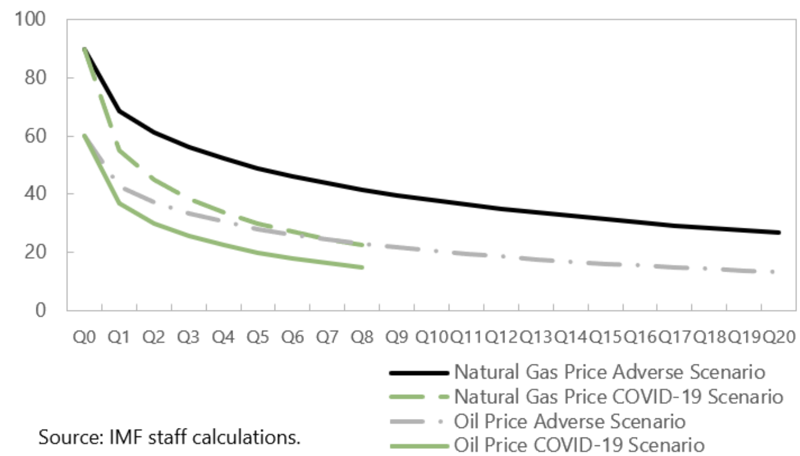
A. Risks and Vulnerabilities

8. **Before the COVID-19 epidemic, Algeria's economic outlook was already challenging.** The trajectory of foreign reserves was not sustainable and the risk of a sudden adjustment in inflation and the exchange rate was rising. At end-February 2020, reserves were at 13.5 months of imports, but had fallen by two-thirds since 2014. Since energy prices began to fall in 2014, lending to the economy – largely by public banks - has grown cumulatively by 50 percent, a pace that constitutes a challenge for the effective control of credit risk. At end-2019, credit to the non-government public sector, largely SOEs, was 32 percent of total credit, and credit to the private sector including subsidized lending schemes, was slightly below that level. SOE profits and the ability of the State to reimburse banks for lending subsidies both depend on hydrocarbon prices; these are thus the most significant risks.

9. A prolonged pandemic-related slowdown would further reduce foreign reserves, increasing the risk of a sudden adjustment in the exchange rate and inflation. As 95 percent of Algerian goods exports are hydrocarbon products, low prices for oil or natural gas reduce foreign exchange earnings, squeeze domestic liquidity, and slow economic activity. Containment measures also weigh on the economy (Box 1). Further bond issuance to finance resulting deficits may weigh on weakened bank balance sheets, while MF would undermine confidence, with potentially destabilizing results. Inflation has so far remained stable despite MF, but the continued loss of reserves could increase inflationary pressures over the medium term and potentially lead to a disorderly exchange rate correction. On the other hand, external debt is low and there are few links to global markets, insulating the economy so far from some global financial shocks. Foreign currency deposits and loans are also minimal.

10. The banking system was assessed under two scenarios, one reflecting the current outlook and a more pessimistic one under a sustained COVID-19 epidemic. The baseline scenario envisages a decline in hydrocarbon prices comparable to what had been experienced by May 2020, with low prices persisting for another two years, and GDP also strongly affected. This FSAP baseline is more pessimistic than the current WEO outlook, which expects energy prices to rise in the second half of 2020. Credit risk was also assessed under a more severe COVID-19 scenario, with hydrocarbon prices around 25 percent lower. While the risk assessment matrix (Annex II) was prepared well before the pandemic, the key elements of an adverse scenario remain relevant and are incorporated. A sustained COVID-19 pandemic would depress hydrocarbon prices further and for a longer period of time. Growth, globally and in Algeria, would remain slow, and public sector resources would be further depleted. This would weigh on suppliers' balance sheets and raise NPLs. A sustained decline in export revenues would also weigh on FX reserves, raising the likelihood of a destabilizing exchange rate adjustment.

Hydrocarbon Price Assumptions



Source: IMF staff calculations.

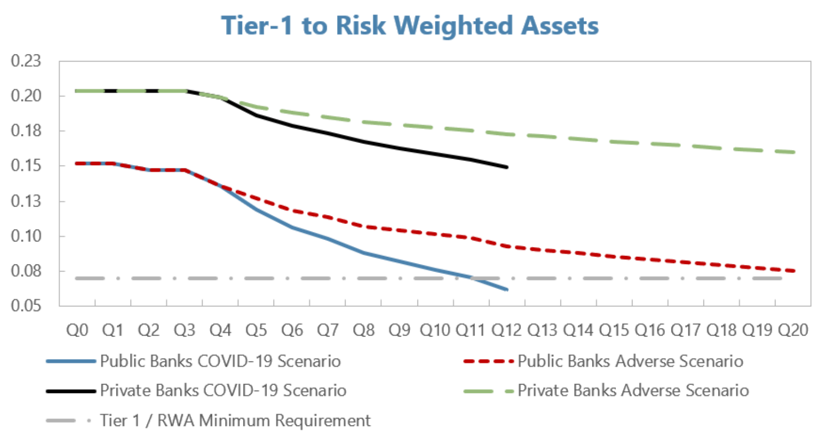
B. Outcome of the Stress Tests

11. Solvency and liquidity stress tests were conducted using two different models. The authorities' framework was used for joint IMF-BA tests. Additional tests were run using an alternate IMF model that allowed for greater granularity and interaction among solvency and liquidity risks. Baseline and adverse scenarios were run for solvency and liquidity, as well as for a test combining both. Sensitivity analyses were also conducted for market risks from interest rates and exchange rate mismatches. The tests had horizons of five years (solvency) and six months (liquidity). For the large banks, the results for both models were similar, but given their greater granularity and coverage, the IMF model results are presented below.

- ***Solvency scenarios*** assumed a shock to oil and gas prices and to the exchange rate consistent with the above scenarios, and assessed the impact of such shocks on migration of loans to NPLs using a satellite model. Insufficient data preclude calibrating a macroeconomic model; macro variables were thus shocked to simulate the effects of RAM scenarios, including a large fall in oil prices.

- ***Liquidity scenarios*** focused on cash outflows and a change in haircuts on unencumbered government bonds. Outflows of corporate deposits were larger than those of retail deposits, in line with historical experience. Banks were considered to have failed the test if their net liquidity positions (NLPs) fell below zero.

- The ***combined scenarios*** stressed migration to NPLs and changes in market prices of bonds combined with deposit outflows.



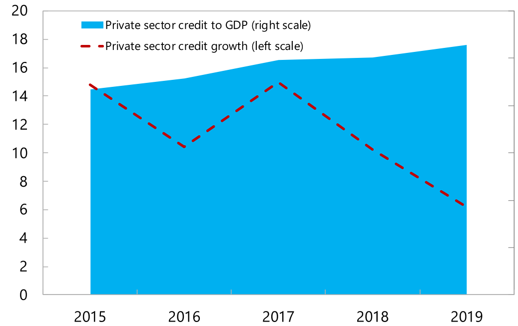
Source: IMF staff calculations.

12. Under the baseline, some banks are undercapitalized, while positions were worsened under the prolonged COVID-19 scenario. Using current reported NPLs as the baseline, four banks appeared undercapitalized in the baseline scenario with an estimated recapitalization cost of ¼ percent of GDP. Under the more severe prolonged COVID-19 scenario, however, five banks show a Tier 1 ratio below minimum requirements in the third year, with one bank's equity negative. The overall sector's aggregate ratio falls also below the 7 percent required minimum. Beyond this, there are potential second-round and nonlinear effects, not fully captured in the analysis, that could further raise losses.

Figure 3. Algeria: Vulnerabilities

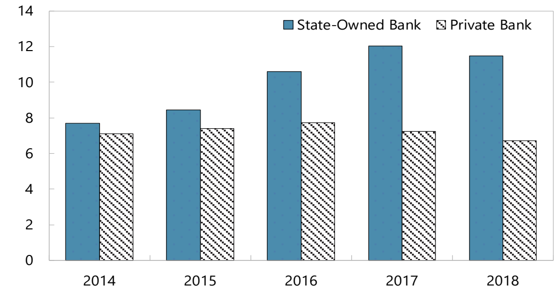
Private credit growth has been strong but slowing in recent years…

Private Sector Credit Growth and as a share of GDP
(In percent)



…and reported NPLs are only slightly off recent peaks, though these are potentially understated.

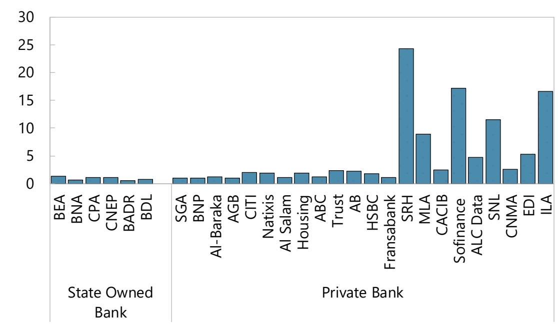
NPLs to Total Assets by Bank Type
(In percent)



Sources: Bank of Algeria
Notes: NPLs refers to total gross non-performing loans for all sectors.

The SOBs operate with less liquidity than the private banks, though coverage appears adequate.

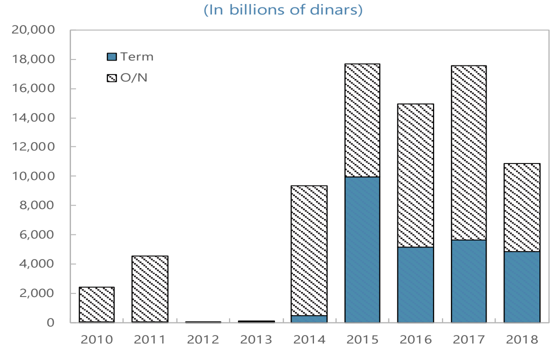
Bank Liquidity Ratios by Bank Type
(State Owned Banks vs Private Banks)



Source: Bank of Algeria
Note: Bank Liquidity Ratios are defined as the ratio of the sum of liquid assets and funding commitments to short term liabilities.

Higher liquidity has meant lower interbank market turnover.

Interbank Market Volumes
(In billions of dinars)

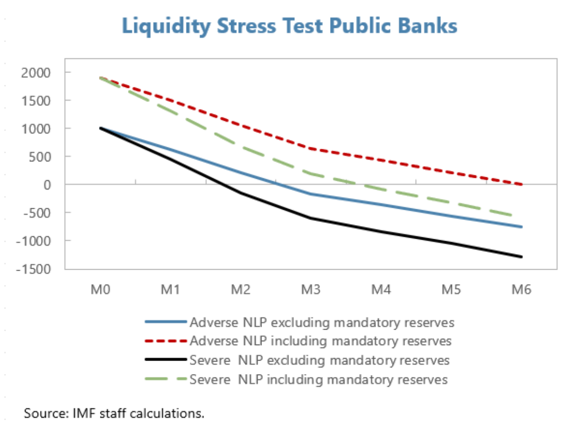


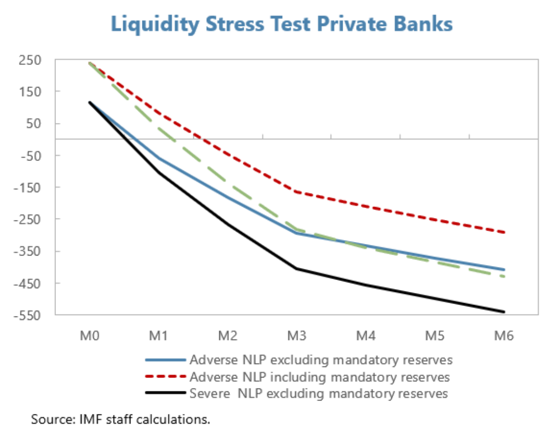
Source: Bank of Algeria

13. Full provisioning of legacy NPLs could further erode positions. The stress tests take as a basis the reported current level of NPLs, which includes some overdue credits that are not written off due to legal concerns about potential recoverability. This forbearance on public banks' exposures to SOEs and to government-subsidized credit schemes (for housing and small businesses) means that the elasticity of credit losses to macroeconomic shifts may be underestimated. Additionally, it is not clear how much of these NPL stocks are inadequately provisioned. If they were entirely written off, around 59 percent of Tier 1 capital could be extinguished system-wide and at least one systemic bank would become insolvent under the baseline, with even larger effects under stress scenarios. It is thus possible that full recognition of NPLs would increase fiscal and quasi-fiscal pressures significantly.

14. Algeria's high bank reserve requirements, if relaxed, would help the banks remain liquid under stress. Assuming the BA would lower reserve requirements in case of stress—as it has done so far—the liquidity of all SOBs would remain positive through the six-month baseline, but in the severe scenario all banks but one had a negative net liquidity position (NLP), even including required reserves. In all scenarios, four banks started the stress test with a liquidity ratio below 100 percent.[2] Within one week, only one bank had a liquidity ratio above 100 percent, and within one month all banks had a liquidity ratio below 100 percent.

15. In the combined tests, credit stress affects bank liquidity. In the liquidity stress test, banks secured borrowing addresses liquidity stress but has no effect on RWA and thus solvency. On the other hand, the value of liquid assets falls in the solvency stress test as higher interest rates push down the price of bonds, reducing the value of potential collateral that can be used to borrow and raise liquidity. In the adverse scenario, all six banks must dip into their required reserves to keep their NLP positive.





16. Large exposure risks are a serious concern, while market risks appear less important. Each bank has substantial exposures, both through deposits and through lending, to its three largest corporate clients. Migrating all loans to the three largest corporates into NPLs would result in five of the six SOBs becoming undercapitalized, though none would become insolvent. In sensitivity testing, the response of capital ratios to a rise in interest rates of 400 basis points was not large, due to the small size of the mark-to-market portfolio. Similarly, FX exposures are minimal, so the direct balance sheet effect of a 30 percent devaluation of the dinar was also small.

SUPERVISORY ISSUES

A. Financial Supervision

Independence and Governance of the Supervisory Authorities

17. Operational independence and sufficient resources should be ensured, and supervisory posts staffed on a permanent basis. Since the 2013 FSAP, there have been no major changes to

[2] The liquidity ratio used by the BA is similar, but not identical, to the LCR.

governance arrangements of supervisory entities, which lack independence. The terms of both the chair of the Monetary and Credit Council (CMC), responsible for regulations and banking license approvals, and the chair of the separate Banking Commission (CB), responsible for supervision are not defined in legislation. Both positions have been held by the Governor. Following the 2019 elections, two new Vice-Governors were appointed at the BA and the CMC could meet again. Going forward, vacant posts should be filled expeditiously, the operational independence of these authorities (CMC and CB) protected by law, and resources increased commensurate with supervisory duties.

18. Supervisory organization should be improved. Lines of reporting are not clearly documented, and no strategy has been drawn up to define the guidelines and vision of the CB with regard to prudential supervision. There are important potential supervisory synergies between the BA's General Directorate for General Inspection (DGIG) and the General Secretariat of the Banking Commission (SGCB). Internal inspection and audit could be split off from the DGIG, and the remainder merged with the SGCB. This would strengthen prudential supervision by avoiding duplication and allow the development of areas of expertise by type of risk. In such a configuration, the duties of the General Director for Bank Supervision would be held along with those of the General Secretary of the CB.

19. The Banking Commission (CB) should apply sanctions when warranted. No individual order and no administrative or financial penalty has been handed down since 2013, even though several banks failed to observe at times certain prudential rules, including on liquidity, risk concentration, and large exposure limits. The CB has instead used reminder letters and persuasion to encourage the banks to respect prudential requirements.

Priority Actions for Bank Risk Management

20. There should be a stricter monitoring of NPLs and of their provisioning, as well as improvements to the legal and regulatory framework for writing off NPLs. Rapid changes in liquidity and rising NPLs call for vigilance on mounting risks, and stress test results point to potential large losses under a prolonged COVID-19 epidemic. Stricter loan classification and better provisioning, phased in when the epidemic situation stabilizes, would stop the growth of the stock of underprovisioned legacy NPLs. At that point it would be useful for the BA and the Ministry of Finance (MOF) to prepare a comprehensive review of the quality of credit portfolios, including the review of assets, guarantees, and provisions. Following this exercise, the CB should ensure that banks are compliant with capital requirements, even if additional capital injections are necessary.

21. Better data are needed for effective supervision. The CB has required that the banks establish information systems that allow them to improve their capabilities in aggregating and reporting of data, but weak information systems and poor practices in data management obscure supervisors' view of the system. A credit reference service established in 2015 by the BA represents a notable advance, but it remains to be fully rolled out, and has not been accompanied by an upgrading of the central database for delinquent loans. The financial statements of domestic enterprises should be made available online, and financial disclosure rules put in place.

Prudential Regulation and Supervision

22. Following through on the implementation of regulatory changes is essential. Rules for classification of doubtful assets and for provisioning of credit risks have been introduced but are not fully implemented by banks on SOE exposures or subsidized credit loans. New rules on concentration risk and the supervision of large exposures have been established, though some areas could be brought closer to Basel III. Draft regulations – on internal control and governance, related parties, consolidated financial statements, and consolidated supervision – have been prepared, but not yet promulgated, on the grounds that some legal provisions might prevent this. Full implementation and enforcement of these rules would strengthen risk management.[3]

23. Remaining disparities between Algerian regulatory requirements and international standards call for further regulatory alignment. Liquidity requirements have not been modified since 2011, and liquidity risks are not monitored through the Basel-sponsored Liquidity Coverage Ratio and Net Stable Funding Ratio. Given stress test results that point to potential liquidity risks, this framework should be updated. The authorities have considered introducing a leverage ratio, but the draft regulation has not yet been shared with the banks.

24. The authorities should continue to improve the monitoring of system-wide risks and their capacity to take macroprudential measures. A Financial Stability Committee composed of the BA Governor and main BA executives, was established in 2014, but has not met since 2015. A robust prudential apparatus requires the effective collaboration of several government services (particularly the MOF, including in its roles as primary shareholder and guarantor of SOE debt). The authorities could use the IMF's technical assistance recommendations to boost macroprudential analysis, which is still weak. The BA, as part of its financial stability mandate, should also revive its plan to establish a macroprudential unit. At this stage, the foreign exchange and systemic credit risks are relatively limited, but that could change as the financial system develops.

Monitoring Approach

25. The approach to monitoring needs to be strengthened.

- While communication at the technical level is ongoing, supervisors do not have a ***holistic view of bank soundness*** at the managerial level. No close discussion between the supervisor and the risk or internal control directorates of the SOBs have taken place in the past two years. This interaction needs to be ongoing and should be improved.

- The ***ratings system*** should be updated more regularly. The CAMELS-like system is based on five components, but ratings are not updated regularly: the five largest Algerian banks have not been reviewed since the beginning of 2017.

[3] The Middle East Regional Technical Assistance Center has been providing remote TA on supervisory review and evaluation processes in 2020.

- Supervision should be ***based more on risks***. Inspections should be targeted and thematic, aimed at addressing key weaknesses. This would help focus scarce resources in areas where they can be of greatest benefit.

- Tasks should be allocated more rationally between ***on- and off-site supervision*** while recognizing that on-site supervision faces severe capacity constraints. Off-site inspectors should use the same highly documented methodological guides as on-site monitoring teams.

- Inspectors should be more forceful on ***reclassification and provisioning***. On-site inspection reports contain many well-substantiated findings that stress the ongoing and high vulnerabilities, but reports examined by the assessors show that the inspectors are very reluctant to ask the banks for reclassification of nonperforming loans or for additional provisions.

B. Anti-Money Laundering and Combating the Financing of Terrorism

26. Since 2012, substantial legal and regulatory reforms have been undertaken to strengthen the AML/CFT framework, but important shortcomings remain. Algeria to a large extent is not yet in compliance with Recommendation 12 of the FATF on politically exposed persons (PEPs), including because not all of the enhanced due diligence measures are required in the Algerian legislative framework, and domestic PEPs are not included. The regulatory framework governing the due diligence process when the client is a legal entity is more closely aligned with international standards, but additional tools are needed to assist the private sector in determining and verifying the identity of beneficial owners.

27. The large stock of currency in circulation outside the banking system, estimated at about 25 percent of GDP, increases ML/TF risk. For the purposes of controlling liquidity in circulation – in particular in the informal sector – and promoting financial inclusion, in 2018 the BA issued two instructions to the banks. According to those instructions, the banks may no longer require documentary proof of the origin of all funds deposited. While the goal of the authorities is to shrink the informal economy, this measure – which does not have any threshold – increases ML/TF risk, is not consistent with the FATF Standard, and impedes the ability of financial institutions to understand their customers, develop risk profiles and identify suspicious activity.

28. Algeria has yet to carry out a national assessment of its ML/TF risks. There is an urgent need for the country to identify, measure, and analyze the risks that exist, in order to take the necessary steps to mitigate them effectively. The national risk assessment should be prepared prior to the next MENA FATF peer review, which could take place as early as 2022, since the understanding of ML/TF risks is fundamental to compliance with the current FATF recommendations.

29. The Financial Intelligence Unit (CTRF) is an autonomous and operationally independent unit that reports to the MOF. The CTRF has the rule-making powers required for the exercise of its duties, but a significant shortage of human and technical resources limits its effectiveness, in particular with regard to the prioritization and analysis of suspicious transaction reports (around 1200 to 1400 per year) and the conduct of strategic analysis. It is important that the Algerian authorities provide the necessary resources to the CTRF to combat money laundering and terrorist financing more effectively.

30. The AML/CFT supervision of banks and of the financial services offered by the Post Office is the responsibility of the DGIG, which acts on behalf of the Banking Commission. The DGIG applies elements of a risk-based approach to determine the annual monitoring plan, which is to be adjusted once the findings of the national risk assessment have been obtained. Although sanctions are available in the event of a breach of AML/CFT rules, over the past five years the Banking Commission has not imposed any such sanctions.

FINANCIAL SAFETY NETS AND CRISIS MANAGEMENT

31. There has been little progress in enhancing the bank safety net or introducing a specific resolution framework since the last FSAP. The limit for guaranteed deposits was increased by more than three-fold to 2 million dinars in 2018 and the investment guidelines for the Deposit Guarantee Fund (FGDB) were specified.[4] Algeria is still lacking a legal bank resolution regime and bank insolvency is still governed by the Commercial Code. This framework proved ineffective during private bank failures in 2003-07, leading to long delays in liquidation proceedings and in repayment of creditor claims. A bank special resolution regime needs to be introduced and the financial safety net strengthened.

32. In addition to introducing a bank specific resolution regime, the authorities should designate an independent resolution authority and define its responsibilities. A properly designed bank resolution regime, with effective resolution powers that can deal with systemic failures should be introduced. The supervision and resolution functions, which are currently divided between the Bank of Algeria, CMC, and CB, would benefit from more formalized and well-defined processes. The responsibilities of the BA could benefit from more legal clarity vis-à-vis the powers of the CB in relation to financial stability-related functions (and especially to the functions related to dealing with bank distress and failure).

33. The CB has a relatively broad set of tools to enforce corrective actions, but these powers have not been used in the past, despite banks having consistently failed to meet one or more prudential requirements. The prompt corrective action framework would benefit from more formal rigor, reducing discretion and delivering more predictability in CB actions. This should include a set of early warning indicators to escalate supervision, by requiring corrective actions based on a progression of increasingly rigorous and intrusive powers to deal with problems of growing gravity. The CB should broaden the set of early intervention measures using triggers for instituting corrective actions. The authorities should establish recovery planning requirements for banks, including for subsidiaries and branches of foreign banks.

[4] The FDGB is a non-profit corporation owned by the banks, but the BA is represented on the Board.

34. The BA should formalize an Emergency Liquidity Assistance (ELA) framework in line with best international practices, including by introducing stringent requirements to discourage the banks to take excessive risks and reduce moral hazard. ELA should be requested by the bank, but decided at the discretion of the BA, and it should be distinct from standard monetary policy operations. In addition, it should be granted only to illiquid, but solvent, banks.

35. The current deposit insurance arrangement (FGDB) suffers from several significant shortcomings. The authorities, including the FGDB, have no current information on the structure of deposits, so that the coverage limit and bank insurance fees are decided arbitrarily. The FGDB should rapidly ensure access to the depositor's records at all times and undertake actions to ensure prompt and accurate payouts to depositors. Best governance practices call for operational autonomy, transparency, accountability, and insulation from external (e.g., political or industry) influences. The payout period should be significantly reduced, converging to best international practices. Also, strong funding arrangements and liquidity contingency plans are important components for ensuring public confidence in deposit insurance. Finally, the set-off practices between insured deposits and loans outstanding should be reconsidered.

SYSTEMIC LIQUIDITY

36. The BA has actively managed liquidity in recent years. From January 2018 to July 2019, the BA sterilized liquidity surpluses using bank reserve requirements and bank deposit auctions.[5] Since then, liquidity tensions have reemerged, leading some banks to access the BA marginal lending facility, then the seven-day open market operations that were reactivated in August 2019. Some banks had difficulties in meeting the minimum reserve requirements and others in complying with the liquidity ratio.[6] The BA rigorously monitors banking system liquidity and autonomous factors. It has already demonstrated active management of the reserve requirement ratio since 2010 and will continue to decide the appropriate time for further adjustment of the ratio.

37. In recent years, the BA has considerably strengthened its standard liquidity management framework. It introduced open market operations, practices for liquidity monitoring and forecasting, and a calibration of the volume of its operations considering international practices. The BA has also reformed its liquidity management decision-making process under normal conditions and initiated the modernization of its collateral framework for monetary operations.

38. Firming up the interest rate corridor for the interbank rate would facilitate better anchoring of the short end of the yield curve. The current corridor should be enforced strictly, with a remunerated deposit facility at the lower end. Fluctuations of the interbank interest rate should be confined to this corridor centered on the BA policy rate. This would contain the volatility

[5] "Reprises de liquidités."

[6] The liquidity ratio of the BA does not include the required reserves in the numerator.

of interbank rates during periods of exogenous shocks and strengthen the signaling effect of the standard liquidity management framework.

39. The BA's deposits could be transformed into issuance of BA securities to increase the available collateral. BA securities should be issued at variable-rate auctions, as is the case for the BA seven-day deposits. Regular issuances of T-bills, while avoiding competition between the BA's instruments and government securities over the same maturities, would support price formation. The BA could continue focusing its operations on the short end of the yield curve (less than 13 weeks), while the Treasury would maintain the issuance of T-bills on a regular basis with maturities of 13 and 26 weeks. The reform initiated by the BA of its liquidity management framework should be pursued, including elimination of the rediscount window.

40. Deepening the money market is crucial to strengthen resilience to exogenous shocks. Given fluctuations in systemic liquidity, it is important to ensure sufficient availability of high-quality liquid assets and to develop a repo market between banks that reduces counterparty risk and improves the circulation of liquidity within the banking system. The creation of a certificate of deposit market would likewise avert excessive recourse by banks to the BA refinancing in periods when liquidity is drying up. The possibility of issuing commercial paper would support the diversification of corporate funding resources.

DEVELOPMENT PRIORITIES

41. Several priorities emerge for developing a financial system that could better serve households and SMEs:

- **Governance of SOBs.** Board, internal control and risk management mechanisms of the SOBs lack effectiveness and independence. Reform should also aim to develop the professional shareholder functions at the MOF and phase out the use of directed bank credit for development priorities. This should be supported by an independent and professional agency to perform the main duties of shareholder, such as by choosing competent and independent directors to strengthen the capacity of SOB boards and monitoring the financial performance of holdings.

- **Reform of subsidy programs.** Forty-four percent of total lending is subsidized, and credit decisions are infrequently taken based on creditworthiness. The main subsidy programs for SMEs and microenterprises (the *dispositifs d'aides* ANSEJ, ANGEM, and CNAC), which are important contributors to potentially underprovisioned exposures, should be separated from the public banks. Going forward their role in providing support for the sector should be reconsidered. Targeting of housing subsidies should be improved by establishing a system where they fall with income and affordability and reducing the support by way of price controls (selling price, rent, interest rate), with an increase in direct aid to persons in line with their income. Subsidies for enterprises should be designed to attract additional bank financing and should be conditioned on contributions from the borrower. Transparency and financial reporting should be improved, and a new regulatory framework for microfinance developed. Partial credit guarantees should be reformed to make enforcement faster and more predictable, with pricing based on risk.

- **The use of digital payments should be encouraged.** Digital payments are underdeveloped. The authorities could open the provision of payment services to duly regulated and supervised nonbanking institutions, subject to appropriate prudential and AML/CFT requirements. Providers of digital financial services should be able to use reselling agents in order to facilitate access by clients to their services. The consumer protection framework should be strengthened, and legal certainty of payment systems ensured.

Proposed Decision

The following decision, which may be adopted by a majority of the votes cast, is proposed for adoption by the Executive Board:

The Executive Board takes note of staff's analysis and recommendations in the report on

Algeria's Financial System Stability Assessment (SM/20/123, 7/17/2020).

Annex I. Follow-up on the Main Recommendations of the Previous FSAP (2014)

Recommendation	Status
Leverage hydrocarbon revenue for financial sector development: Improve intergenerational smoothing of hydrocarbon revenue (full-fledged fiscal rule, sovereign wealth fund (SWF)).	Budgetary drawings on the Revenue Regulation Fund (FRR) exhausted its funds in 2017. There is not yet a sovereign fund to invest public savings on long-term returns.
Exchange controls: Gradually reduce restrictive measures on foreign exchange transactions.	Not yet on the agenda. It is desirable to activate a spot foreign exchange market.
FX market: Allow non-hydrocarbon exporters to sell directly into the foreign exchange market, to stimulate its development, including for forward contracts.	An instruction of November 26, 2017 organizes the foreign exchange market.
Liquidity management: Create a structural liquidity shortage to facilitate monetary policy implementation.	The BA used reserve requirements and bank deposits at the BA to reduce excess liquidity when needed.
SOB reform: complete corporate governance reform agenda	Under way. Draft legislation on governance of the banks; the draft 2020 budget law includes guidelines to this end.
Consumer lending: Replace consumer lending restrictions with prudential measures; introduce an effective public credit registry for households, and personal bankruptcy framework.	Under way. Consumer loans are authorized and distributed by banks.
Banking Supervision: Facilitate the write-off of NPLs; improve operational framework for supervision; continue towards Basel II/III; develop stress-test expertise.	Partial progress on operational supervision and stress-testing.
Small- and medium-sized enterprise (SME) lending: Revisit existing government support programs for microenterprises and SMEs, including partial credit guarantee funds.	Not yet implemented
Insurance: Adapt MTPL premiums and reduce compulsory reinsurance.	Not yet implemented
Insolvency regime: Modernize the insolvency regime, to mitigate risk and strengthen the credit environment.	Not yet implemented
Collateral regime: Improve debt enforcement procedures.	Not yet implemented
Criminal sanctions: Clarify Criminal Code sanctions on mismanagement of funds in state-owned enterprises (SOEs), with judicial training on Implementation.	Not yet implemented
Payment Systems: Set-up a payment system council to monitor the modernization of payment systems and formalize a plan to decrease the proportion of fiduciary money in M2.	Not yet implemented
Capital market development: Finance budget deficits through the issuance of T-bonds along the yield curve and revisit the issuance policy at the MOF to foster liquidity	The budget deficit has been financed by the BA the 2017-2018. Issuance of sovereign securities still limited.
Stock exchange: Implement the 2012 COSOB modernization program.	No significant progress

Recommendation	Status
Crisis management: Establish (i) special resolution regime for failing financial institutions; (ii) memorandum of understanding (MoU) outlining principles for financial crisis management; and (iii) MoU between safety net participants on information exchange and decision-making processes.	No resolution regime yet. Safety net still missing other components.
AML/CFT: Implement action plan established with the FATF International Cooperative Review Group.	Gradual implementation underway

Annex II. Risk Assessment Matrix (RAM)

Source of Risks	Likelihood of severe realization of threat in the next 3 years	Expected impact on financial stability if threat realized
Prolonged Covid-19 outbreak. Containment measures remain in place (in some places intensify or need to be re-introduced) through early 2021. Longer containment and uncertainties about the intensity and the duration of the outbreak reduce supply (including through global value chains' disruption) and domestic and external demand, depressing oil prices with uncertainty about future production contributing to continued high price volatility. Rising bankruptcies translate into financial institutions' losses, forcing them to cut credit, with further adverse implications for growth. Concerns about public debt sustainability mount, and EMs and frontier economies experience a greater number of sudden stops.	***Staff assessment: high*** Much lower oil/gas prices are possible in the absence of oil export cuts agreed by the US, Russia and the OPEC. That would exacerbate fiscal and external imbalances and slow down the economy. Algeria's current external buffers would not be enough to mitigate the effects of persistently low prices.	***Staff assessment: high*** Falling revenue would reduce public sector liquidity, leading to payment arrears to service providers and in turn to increased NPLs for banks. Public banks might face higher credit demand from SOEs. They could also lack needed capital injections from the CG to shore up capital buffers. CARs might get thinner with credit quality deteriorating. The CG would increase its debt to fund financial restructuring in the public sector. However, depending on bank liquidity, this might involve further monetary funding.

Source of Risks	Likelihood of severe realization of threat in the next 3 years	Expected impact on financial stability if threat realized
Weak global growth, due to weak growth in key AEs and cyclical downturn in EMs or to an exogenous shock such as a health pandemic (e.g., Covid-19).	***Staff assessment: high*** Weak global growth would impact Algeria chiefly through lower oil prices, possibly with reduced export volumes of gas. The Covid-19 pandemics has brought about a strong hit to global growth after the FSAP assessment.	***Staff assessment: high*** With limited external exposure of non-hydrocarbon sectors, a mere global slowdown would act as a milder version of the above, with a squeeze on bank liquidity and profitability. The pandemics impact is, however, stronger than a mere slowdown.
Default of large borrowers. The largest borrowers are SOEs or other PSEs that depend on CG recurring support through subsidies and capital injections. .	***Staff assessment: low*** Macro-financial links are centered on the CG. In the event of combined shocks (low oil prices, high CG deficit and excessive import demand), CG expected support to SOEs/PSEs could lag for several months.	***Staff assessment: low*** Large public banks' exposures to SOEs/PSEs could be swapped with claims on the CG, as has occurred in recent years. Low sovereign debt and high hydrocarbon reserves make a sovereign default unlikely.

Annex III. Financial Soundness Indicators (2009-2018)

(in percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 (Prel.)
Capital adequacy ratio	26.2	23.6	23.7	23.4	21.5	16.0	18.4	18.8	19.4	19.0
- Public banks	23.9	21.7	21.9	21.6	19.9	14.9	17.8	18.4	19.6	19.2
- Private banks	35.2	31.6	31.2	31.9	28.5	20.9	21.0	20.3	18.5	18.2
Tier I capital adequacy ratio	19.1	17.7	16.9	17.5	15.5	13.3	15.8	16.2	15.0	15.0
- Public banks	15.6	14.8	14.1	14.8	13.1	11.7	14.6	15.4	14.3	14.4
- Private banks	32.9	29.3	28.8	29.7	26.3	20.2	20.3	19.6	17.8	17.4
NPLs net of provisions/Regulatory capital	33.9	21.1	19.4	16.1	17.1	21.4	26.6	35.0	36.4	39.3
- Public banks	46.0	27.5	25.1	20.3	21.7	26.8	29.6	40.0	40.8	44.9
- Private banks	1.5	3.0	2.3	3.2	2.6	4.6	16.1	16.7	16.2	13.4
NPLs/total loans	21.1	18.3	14.5	11.5	10.6	9.2	9.8	12.1	13.0	12.6
- Public banks	23.6	20.5	16.1	12.4	11.4	9.7	9.9	12.6	13.7	13.4
- Private banks	3.8	4.1	4.0	5.2	4.8	5.1	8.6	8.7	7.8	7.1
Return on equity	26.0	16.7	24.7	23.3	19.0	23.6	21.0	18.1	18.8	22.4
- Public banks	27.9	29.8	26.1	22.7	18.0	25.1	22.7	18.9	20.0	22.7
- Private banks	20.9	20.3	21.4	24.8	21.5	19.6	16.1	15.3	14.7	21.2
Return on assets	1.8	2.2	2.1	1.9	1.7	2.0	1.9	1.9	2.0	2.4
- Public banks	1.5	1.8	1.8	1.5	1.3	1.8	1.7	1.7	2.0	2.3
- Private banks	3.7	4.6	4.5	4.5	3.7	3.3	3.1	2.8	2.6	3.4
Interest margin/gross revenues	58.4	63.8	64.9	64.2	69.5	68.5	66.8	72.6	73.0	78.8
- Public banks	60.4	71.6	73.6	72.1	73.3	68.4	65.8	72.4	72.7	80.8
- Private banks	52.5	44.2	44.4	45.2	59.1	69.1	71.5	73.4	74.2	71.1
Non-interest expenses/earnings before tax	32.2	31.4	33.6	35.6	33.5	40.7	40.0	34.0	36.0	29.3
- Public banks	33.7	31.6	34.8	38.1	34.0	40.3	39.2	31.3	33.7	26.4
- Private banks	31.0	31.0	30.8	29.8	32.3	42.0	43.4	46.3	46.2	40.5
Liquid assets/total assets	51.8	53.0	50.2	45.9	40.5	38.0	27.1	23.5	23.5	19.8
- Public banks	52.8	54.2	51.1	45.1	39.4	37.0	25.8	22.7	21.9	18.4
- Private banks	44.7	43.7	43.2	50.9	46.5	44.0	35.9	28.9	33.1	28.5
Liquid assets/short-term debt	114.5	114.3	103.7	107.5	93.5	82.1	61.6	58.3	53.7	47.4
- Public banks	118.4	118.1	106.6	110.5	95.7	83.4	60.2	58.8	52.2	46.3
- Private banks	89.0	88.5	84.6	93.5	84.1	75.4	69.8	55.9	60.6	52.6

Source: Bank of Algeria

Annex IV. Selected Economic Indicators

						Prel	Proj.		
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Output and prices				(Annual percentage change)					
Real GDP	3.8	3.7	3.2	1.3	1.4	0.8	-5.3	4.8	2.5
Hydrocarbon sector	-0.6	0.2	7.7	-2.4	-6.4	-4.9	-17.7	20.5	8.0
Nonhydrocarbon sector	5.6	5.0	2.2	2.1	3.3	2.4	-2.4	3.3	1.8
Per capita	1.6	1.5	1.0	-0.8	-0.6	-1.2	-7.0	3.0	0.8
Consumer price index (period average)	2.9	4.8	6.4	5.6	4.3	2.0	3.5	3.7	4.5
Investment and savings				(In percent of GDP)					
Savings-investment balance	-4.4	-16.4	-16.5	-13.2	-9.6	-9.6	-18.4	-18.3	-15.2
National savings	43.1	36.4	37.4	37.7	39.8	37.7	26.3	29.8	31.9
Investment	47.5	52.9	53.9	50.9	49.4	47.3	44.7	48.2	47.1
Central government finances				(In percent of GDP)					
Overall budget balance	-8.7	-15.7	-13.4	-8.6	-6.9	-9.3	-18.5	-14.7	-12.4
Revenue	33.3	30.5	28.6	32.6	33.7	32.4	26.6	29.5	28.3
Expenditure (incl. net lending)	42.0	46.2	42.0	41.1	40.6	41.7	45.0	44.2	40.7
Gross government debt (excluding guarantees)	7.7	8.7	20.5	27.1	38.1	46.2	59.5	65.0	70.6
Central bank financing (flow) 2/	0.0	0.0	0.0	11.8	16.6	4.9	6.4	8.4	0.0
				(In percent of nonhydrocarbon GDP)					
Nonhydrocarbon primary balance	-37.6	-36.5	-27.5	-24.2	-26.6	-27.1	-26.2	-25.0	-23.0
Nonhydrocarbon balance	-37.9	-36.8	-27.8	-25.3	-27.3	-27.7	-26.8	-25.6	-23.9
Revenue	45.6	37.6	34.6	40.7	43.5	39.9	29.1	33.4	32.6
Hydrocarbon	27.0	17.5	11.6	14.6	18.4	16.2	6.5	9.0	9.6
Nonhydrocarbon	18.7	20.1	23.0	26.0	25.1	23.6	22.6	24.4	23.0
Expenditure (including net lending)	56.4	57.3	51.2	51.6	52.5	51.3	49.4	50.0	46.9
Current expenditure	35.8	34.0	31.6	31.4	33.8	29.6	28.8	27.8	26.8
Capital expenditure	19.9	22.4	18.7	17.5	15.4	16.6	15.1	16.6	15.5
Net lending	0.7	1.0	0.8	2.6	3.3	5.2	5.5	5.7	4.6
External sector 3/									
Current account balance (percent of GDP)	-4.4	-16.4	-16.5	-13.2	-9.6	-9.6	-18.4	-18.3	-15.2
Exports, f.o.b. (percent change)	-6.8	-42.4	-15.9	19.0	19.1	-15.0	-56.6	47.1	8.7
Hydrocarbons	-7.8	-43.3	-16.4	20.0	17.2	-15.4	-59.6	51.4	8.4
Nonhydrocarbons	55.4	-9.1	-6.2	-1.9	62.3	-6.7	-10.2	16.6	10.8
Crude oil export unit value (US$/bbl)	99.4	52.9	45.5	54.1	71.2	64.5	37.3	38.4	41.9
Share of hydrocarbons in total exports (in percent)	97.3	95.7	95.2	96.0	94.5	94.1	87.8	90.3	90.1
Gross official reserves									
In US$ billions	177	143	113	96	79	62	34	13	13
In months of next year's imports of goods and services	33.4	28.4	22.5	19.2	17.8	16.1	7.6	3.0	3.0
Gross external debt (in percent of GDP)	1.7	1.8	2.4	2.3	1.7	1.7	1.6	5.9	20.2
Oil and gas sector									
Hydrocarbon production (in ton oil equivalent)	142	141	153	152	152	143	117	149	151
Memorandum items:									
GDP (in billions of dinars at current prices)	17,229	16,713	17,515	18,576	20,259	20,215	18,102	20,047	21,702
NHGDP (in billions of dinars at current prices)	12,571	13,578	14,489	14,876	15,711	16,427	16,509	17,695	18,824
GDP (in billions of US$ current prices)	214	166	160	167	174	169	146	155	162
GDP capita per (in US$)	5,466	4,153	3,919	4,012	4,081	3,900	3,301	3,449	3,533
Exchange rate (DA per US$)	80.6	100.7	109.4	111.0	116.6	119.4	...	...	...
REER (percent change)	1.1	-6.2	-1.0	2.4	-4.7	2.1	...	...	...

Sources: Algerian authorities; and IMF staff estimates and projections.
1/ Including public enterprises.
2/ Including public enterprises debt buy-back.
3/ In U.S. dollars.

Annex V. Stress Test Matrix

Domain		Assumptions	
		Top-Down Joint With Authorities	Top-Down IMF Model
BANKING SECTOR: SOLVENCY RISK			
1.Institutional Perimeter	Institutions included	• 6 Largest banks (all state-owned)	• All 20 banks (including the 6 state-owned).
	Market share	• About 85 percent of total assets	• 100 percent of total assets.
	Data and baseline date	• December 2018 supervisory data	• December 2018 supervisory data
2. Channels of Risk Propagation	Methodology	Satellite models developed by the FSAP team in coordination with BA stress testing team.	Period-by-period estimation of bank balance sheets using same satellite model.
	Satellite Models for Macro-Financial linkages	Multiple linear regression of migrations to NPL as a result of changes in commodities' prices. Expert opinion for interest rates and other market changes	Same as the joint test.
	Stress test horizon	2019Q1-2021Q4	
3. Tail shocks	Scenario analysis	Adverse scenarios: Shocks to oil and natural gas prices, with macroeconomic consequences such as exchange rate depreciation determined by government policy choices.	
	Sensitivity analysis	•	• Single factor shocks include; i. Credit risk (deterioration in aggregate loan portfolio, sectoral concentration by 10 percent, ii. Concentration risk: Largest 1 and 3 borrower default iii. Direct interest rate risk. Parallel upward shift of local yield curve by 200 bps and 400 bps.

Domain		Assumptions: Top-Down Joint With Authorities	Assumptions: Top-Down IMF Model
4.Risks and Buffers	Risks/factors assessed (How each element is derived, assumptions.)	• Credit losses: losses are provisioned at 100 per cent and net income is reduced to 0. Provisions are deducted from regulatory capital and Tier I • Interest rate risks: positive or negative changes will be estimated by experts. • Impact of interest rate and other market changes on regulatory capital and Tier I will be calculated. • Exchange rate risk: changes due to appreciation/depreciation of local currency. Impact on regulatory capital and Tier I	
	Behavioral adjustments	• Static balance sheet assumption. • No profits during stress point in time • No dividends distributed	
5. Regulatory and Market-Based Standards and Parameters	Calibration of risk parameters	• Based on shocked commodities and FX rates	
	Regulatory/Accounting and Market-Based Standards	• Basel II/III (current standard) • Regulatory requirement CAR of 9.5 (7 for Tier 1 and 9.5 for Tier 1 & 2) percent • Tier I / RWA Tier I & 2 / RWA	
6. Reporting Format for Results	Output presentation	• Capital shortfall below regulatory requirement • Capital shortfall, system wide and by bank type. • CAR system wide and by bank type. • Number of banks (system wide and by type) with a CAR below the regulatory 9.5 percent.	

Domain		Assumptions	
		Top-Down Joint With Authorities	Top-Down with IMF Model
BANKING SECTOR: LIQUIDITY RISK			
1. Institutional Perimeter	Institutions included	• 6 Largest Banks (state-owned)	• All 20 banks
	Market share	• About 85 percent	• 100 percent of total assets.
	Data and baseline date	• December 2018 supervisory data	• December 2018 supervisory data.
2. Channels of Risk Propagation	Methodology	• Cash flow analysis for liquidity	• Point by point simulation of balance sheets, Liquidity ratio/LCR, and other liquidity quantities based on maturity ladder analysis
3.Risks and Buffers	Risks	• Funding risk, • Concentration of funding	• Funding risk, • Concentration of funding
	Buffers	• HQLA	• HQLA • Short term deposits at central bank
4. Tail shocks	Size of the shock	• 5-day deposits withdrawal (5 and 10 percent) • Asset daily disposal rate of 80 percent for liquid assets and 1 percent for illiquid assets. Large depositor(s) withdraw all their funds in 1 day	• Integrated macrofinancial and liquidity scenario incorporating above adverse scenario and liquidity shocks analogous to Joint tests.
5. Regulatory and Market-Based Standards and Parameters	Regulatory standards	• Cash position	• LCR, Liquidity ratio and Net Liquidity Position (cash plus unencumbered bonds).
6. Reporting Format for Results	Output presentation	• Banks that remain liquid	• Number of institutions that remain 'liquid' after a 6 months stress. • Number of institutions that maintain a liquidity ratio above 100 per cent.