



# SOUTH AFRICA

## FINANCIAL SECTOR ASSESSMENT PROGRAM

## FINANCIAL SYSTEM STABILITY ASSESSMENT

February 2022

This paper on South Africa was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on January 21, 2022.

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## FINANCIAL SYSTEM STABILITY ASSESSMENT

January 21, 2022

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This report is based on the Financial Sector Assessment Program (FSAP) that was conducted via in-person and virtual missions during February 2020 and July 2021. The FSAP findings were discussed with the authorities during the Article IV Consultation mission in November 2021.

**Context:** The economy recovered strongly in 2021, following an unprecedented real output contraction in 2020. However, the outlook remains precarious amidst projected future low growth, high unemployment and adverse debt dynamics, and the recovery pace is unlikely to be sustained. Ample buffers allowed the financial system to handle the COVID-19 shock relatively well, but domestic and external downside risks remain substantial—with potential implications for asset quality, profitability, and solvency.

**Findings:** Banks are resilient in the baseline but face notable capital erosion under a severe stress scenario, with weak debt servicing capacity of corporates and the potential intensification of the sovereign nexus posing risks to the financial system. Financial sector regulation is generally strong, with substantial progress since the 2014 FSAP, but more intrusive supervision, a formalized early intervention framework and completed safety net reforms are needed. Progress to further increase financial inclusion and access to finance has slowed in recent years, as account utilization remains limited and micro, small, and medium-sized enterprises (MSME) experience challenges in obtaining financing. The fintech sector remains small, and banking sector entry barriers continue to limit competition.

**Policies:** The challenging environment calls for more intensive supervision, with greater focus on governance and less reliance on external auditors. Further efforts to expand climate change risks in stress testing and supervision and stronger oversight of the growing fintech sector are also warranted. The mission recommended completing the bank resolution framework and finalizing the deposit insurance scheme, which will improve the authorities' ability to handle shocks. Financial sector competition would benefit from reforms to foster market entry and increase capital market financing (including 'green' finance).

The FSAP team was led by Jennifer Elliott, IMF Mission Chief, and Eva Gutierrez, World Bank Mission Chief, and included Constant Verkoren (deputy mission chief), Zsolt Ersek, Rohit Goel, Ren Jie, Aldona Jociene, Tanai Khiaonarong, Suchitra Kumarapathy, Ken Miyajima, T. Tjoervi Olafsson, Nobuyasu Sugimoto, Thierry Tressel, and Christopher Wilson (all IMF); Uzma Khalil (deputy mission chief), Swee Ee Ang, Catiana Garcia Kilroy, Katia D’Hulster, Sonia Iacovella, Harish Natarajan, Douglas Randall, Rekha Reddy, Martijn Regelink, Diego M. Sourrouille, and Fiona Stewart (all WB); as well as Geof Mortlock and Nick Strange (Bank of England) as external experts. Ren Jie and Alice Mugnier provided research support to the IMF team; and Charmane Ahmed and Natalia Naryshkina supported the preparation of this report.

The team met with Governor Lesetja Kganyago, Deputy Governor and Prudential Authority CEO Kuben Naidoo, and senior officials of the South African Reserve Bank; Deputy Director General Ismail Momoniat and senior officials of the National Treasury; as well as senior officials from the Prudential Authority, Financial Services Conduct Authority, the National Credit Regulator, and private sector counterparts.

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 Jennifer Elliott and Constant Verkoren, with contributions from the members of the IMF FSAP team.

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## Glossary

AML/CFT	Anti-Money Laundering and Combating the Financing of Terrorism
AUM	Assets Under Management
CET1	Common Equity Tier 1
CIS	Collective Investment Schemes
DBSD	Department of Small Business Development
DIS	Deposit Insurance Scheme
D-SIB	Domestic Systemically Important Bank
ELA	Emergency Liquidity Assistance
ESG	Environmental, Social and Governance
ETP	Electronic Trading Platform
EWI	Early Warning Indicator
FATF	Financial Action Task Force
FDI	Foreign Direct Investment
FIC	Financial Intelligence Center
FMA	Financial Markets Act
FMI	Financial Market Infrastructure
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSLAB	Financial Sector Laws Amendment Bill
FSC	Financial Stability Committee
FSCA	Financial Sector Conduct Authority
FX	Foreign Exchange
GaR	Growth-at-Risk
GDP	Gross Domestic Product
GEPF	Government Employees' Pension Fund
ICR	Interest Coverage Ratio
IFRS	International Financial Reporting Standards
IFWG	Inter-governmental Fintech Working Group
IMF	International Monetary Fund
JSE	Johannesburg Stock Exchange
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
MMF	Money Market Fund
MSME	Micro, small, and medium-sized enterprises
NBFI	Nonbank Financial Institution
NCR	National Credit Regulator
NDC	Nationally Determined Contribution
NGFS	Network for Greening the Financial Sector

## SOUTH AFRICA

NPL	Nonperforming Loan
NPS	National Payment System
NSFR	Net Stable Funding Ratio
NT	National Treasury
ODP	Over-the-counter Derivatives Providers
PA	Prudential Authority
PD	Probability of Default
PIC	Public Investment Company
RAM	Risk Assessment Matrix
RBA	Risk-Based Approach
RWA	Risk-Weighted Assets
SACCRA	South African Credit and Risk Reporting Association
SAM	Solvency Assessment and Management framework
SARB	South African Reserve Bank
SME	Small and Medium-Sized Enterprises
SOE	State-Owned Enterprises
SSA	Sub-Saharan Africa
TCFD	Task Force on Climate-related Financial Disclosures
USD	United States Dollar
WB	World Bank
WEO	World Economic Outlook

## EXECUTIVE SUMMARY

**The financial system has thus far weathered the shock of COVID-19, but risks continue to loom amidst a weak macroeconomic outlook.** The pandemic crisis hit South Africa hard, as nonresident capital outflows accelerated, and the domestic and global slowdown precipitated a 6.4 percent GDP real output contraction in 2020. A brief period of liquidity stress was managed with new central bank facilities and a lowering of liquidity requirements; and banks proved resilient thanks to sound capital and liquidity buffers. Asset management and pension assets saw falling valuations, but redemption pressures quickly dissipated as markets stabilized. Lack of fiscal reform, looming fiscal contingencies from underperforming state-owned enterprises (SOEs) and pandemic-related expenditures raised public sector indebtedness and sovereign risk. The intensification of the sovereign-financial system nexus emerging from the crisis poses risks going forward. Corporate debt sustainability has weakened during the pandemic but is expected to recover under baseline conditions. The system is exposed to potential external shocks should global financial conditions tighten. A resurgence of the pandemic and/or lackluster economic recovery—absent decisive action to address obstacles to investment and the business environment, strengthen public finances, and reduce the government’s borrowing needs—would continue to pose risks to balance sheets of financial institutions as fragilities of nonfinancial corporates and households may translate into credit losses.

**Banks and insurers appear well-capitalized and liquid in the baseline but may face significant capital erosion if stress modeled in the adverse scenario were to materialize.** A medium-term adverse stress scenario would cause a significant decline in capital although most banks would remain sufficiently capitalized. Under stress, banks could face some liquidity gaps, particularly at very short maturities, highlighting the importance of continued close monitoring and development of domestic repo and money markets. The impact of COVID-19 on insurers has thus far been contained, but prudential rules should be strengthened to ensure the measure of capital is sufficiently robust.

**The impact of capital flow volatility on financial markets is mitigated by the flexible exchange rate, low levels of foreign currency exposures, and prudential limits on foreign investments.** Banks have low exposures to foreign currency assets and the large pool of savings in pension, investment funds and life insurances are by rule dedicated to rand investments. These features also deepen interconnectedness and vulnerability to cross-sectoral contagion.

**Financial sector oversight is strong, reflecting a commitment to independent supervision and the implementation of international standards—but the challenging environment calls for stepped up intrusiveness in prudential supervision and full implementation of the market conduct framework.** Significant progress has been made since the 2014 FSAP, with the implementation of the “twin peaks” regulatory structure, strengthening of risk-based supervision and additional attention to conduct supervision—strengthened coordination between supervisors, including the National Credit Regulator (NCR), would be important. Broadening the macroprudential toolkit, enhancing prudential supervision—with greater focus on governance and risk management



and less reliance on third party auditors—and taking steps to limit a further intensification of the sovereign nexus will be critical. The prudential framework for insurers has been significantly strengthened, but additional supervisory focus on mark-to-market assumptions and use of future profits in capital calculations remains warranted. Cybersecurity supervision has gained traction, with further development of recovery and response capability, third-party risk management and greater use of examinations as the next steps. Amendments of the National Payment Systems (NPS) Act would help establish adequate regulatory, supervisory, and oversight powers for the South Africa Reserve Bank (SARB), ensuring solid management of developments in financial technologies (fintech). Transitioning the Financial Sector Conduct Authority (FSCA) from a compliance focus to a more active conduct oversight role and adopting a risk-based supervision approach for the pension sector with a greater focus on governance and investment oversight would bring significant benefits to the nonbank sector.

**Completing the bank resolution framework and deposit insurance scheme will improve the authorities’ ability to handle shocks.** Finalizing and operationalizing the bank resolution framework, advancing resolvability assessments and resolution planning, and establishing the new deposit insurance scheme—while strengthening its financing arrangements—is imperative. Building on supervisory initiatives for home-host collaboration, the authorities should also seek to build capacity for bank resolution across the region.

**Practices for liquidity management, while generally robust, can be strengthened in some areas.** Repo market liquidity and functioning would be improved with changes in treatment of collateral. Fully aligning SABOR with international best practice will improve market integrity and moving National Treasury (NT) liquidity to a SARB settlement account will reduce contagion risk. SARB’s ELA framework could usefully be extended to the provision of liquidity support to solvent banks facing idiosyncratic shocks. Over the medium term, the legal underpinnings of the SARB’s ‘lender-of-last-resort’ function should be strengthened.

**Climate stress tests point to non-negligible implications of transition and physical risks over the medium term.** Enhancing data gathering and analysis will help the authorities develop a roadmap for supervision and oversight of these risks. Opportunities arising from green finance should be seized, including by enhancing disclosure, finalizing the green taxonomy, and issuing ‘green’ sovereign bonds.

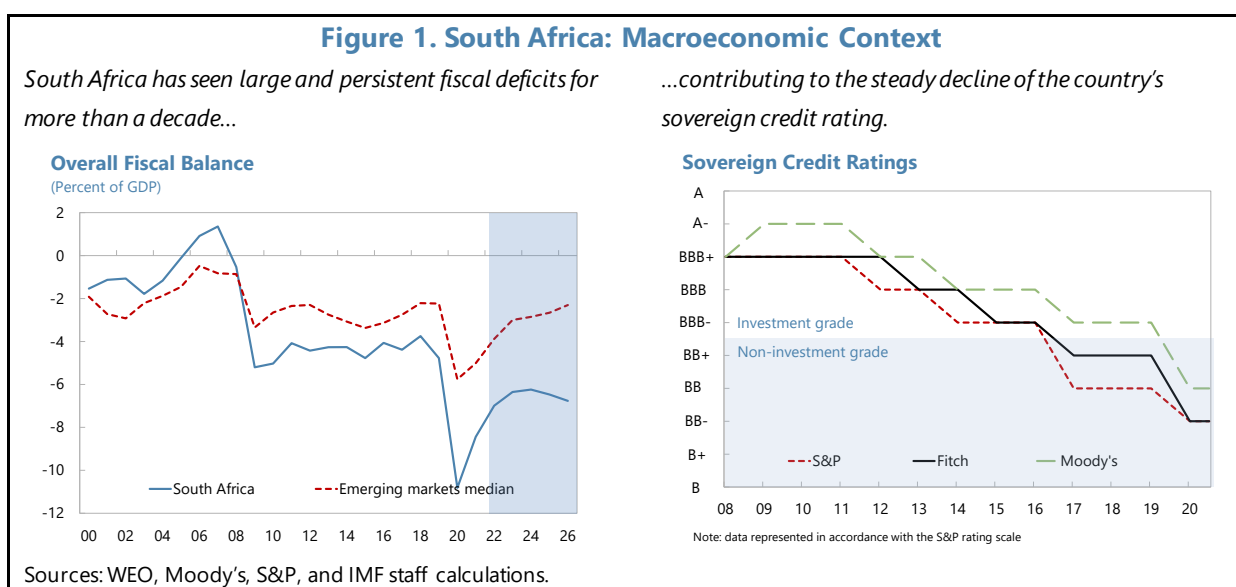
**Reaching the “last mile” of unbanked adults, increasing the use of digital financial services and MSME access to finance, and addressing persistently high levels of credit impairment are the main financial inclusion challenges facing South Africa.** Encouraging fintech solutions for financial inclusion, embedding regulatory frameworks for fintech including for payment providers and crypto assets, amending the National Payment System Act and adoption of the Conduct of Financial Institutions (COFI) bill will enable further financial development and competition under robust oversight. The upcoming Financial Inclusion Implementation Strategy Policy should prioritize enhanced credit information systems, establishing a national credit bureau, improving the secure transactions framework, and promoting payment systems interoperability.

<b>Table 1. South Africa: Key Recommendations</b>		
	Adopted by	Timing <sup>1</sup>
<i>Vulnerabilities analysis</i>		
Further strengthen analytical tools, including for solvency and liquidity stress testing and climate risk analysis, and incorporate results in risk-based supervision	SARB, PA	MT
<i>Financial sector oversight</i>		
Continue to broaden the macroprudential toolkit and close data gaps	SARB	MT
Consider carefully calibrated measures to alleviate sovereign-financial nexus	SARB, NT	MT
Continue safeguarding the supervisory agencies' operational independence; further strengthen resourcing and enhance coordination	PA, FSCA, NCR NT	MT
Pursue more structured, intrusive, and comprehensive (risk-based) supervision, with greater focus on governance and credit, liquidity and other significant risk management	PA, FSCA	ST
Develop a rigorous framework for early intervention in banks	PA	MT
Scrutinize insurers' capital calculations, review products with high lapse and surrender rates, conduct industry-wide stress tests, and analyze the impact of IFRS 17 adoption	PA, FSCA	MT
Enact COFI bill; develop and implement conduct supervision framework	NT, FSCA	MT
Fast-track adoption of the NPS Act, while buttressing supervision of fintechs	NT, FSCA,	ST
Implement a consistent, multi-sectoral regulatory framework that articulates supervisory and oversight expectations for cyber resiliency	SARB, PA	MT
Improve climate risk oversight	SARB, PA	MT
Improve the implementation of the risk-based approach to AML/CFT and bring all sectors covered by the FATF standards under the AML/CFT framework	NT, PA	MT
<i>Financial safety nets</i>		
Adopt and operationalize the new resolution and deposit insurance legislation	NT, SARB	ST
Following the adoption of the new legal framework, step up crisis preparedness through resolvability assessments, resolution planning, and recurrent simulations	SARB	ST
<i>Systemic liquidity</i>		
Extend SARB's ELA guidance to temporary liquidity support for solvent banks	SARB	MT
Improve the repo market by establishing collateral interoperability; harmonizing regulatory treatments of different types collateral and repos; and promoting the wide-spread use of repos under the Global Master Repo Agreement (GMRA)	NT, SARB, PA, FSCA	ST
<i>Competition and efficiency, financial inclusion, green and MSME finance</i>		
Enable the provision of payment services by nonbanks	NT, SARB,	MT
Foster retail payment instrument interoperability and open banking standards	SARB	MT
Improve credit information environment	NCR, FSCA	ST
Strengthen secure transaction framework	NT, NCR	MT
Finalize the taxonomy of 'green' economic activities and start monitoring flows	NT, SARB	MT
Finalize guidelines on climate-related financial disclosures	FSCA, NT	MT
<sup>1</sup> ST = short term (0-6 months); MT = medium-term (6 months–2 years).		

## BACKGROUND

### A. Macroeconomic Context

**1. South Africa entered the global pandemic with substantial vulnerabilities.** The fiscal deficit—already high—increased sharply due to pandemic-related spending and falling revenues, and public debt rose. Struggling SOEs continued to weigh on public finances; and unemployment, poverty, and inequality were stubbornly high. While the flexible exchange rate, favorable composition of government debt (long maturity and mainly in local currency) and a resilient banking system have thus far acted as shock absorbers, structural weaknesses, if left unaddressed, may put public debt on an unsustainable trajectory and can pose serious risks to the financial sector and wider economy (Figures 1 and 7).

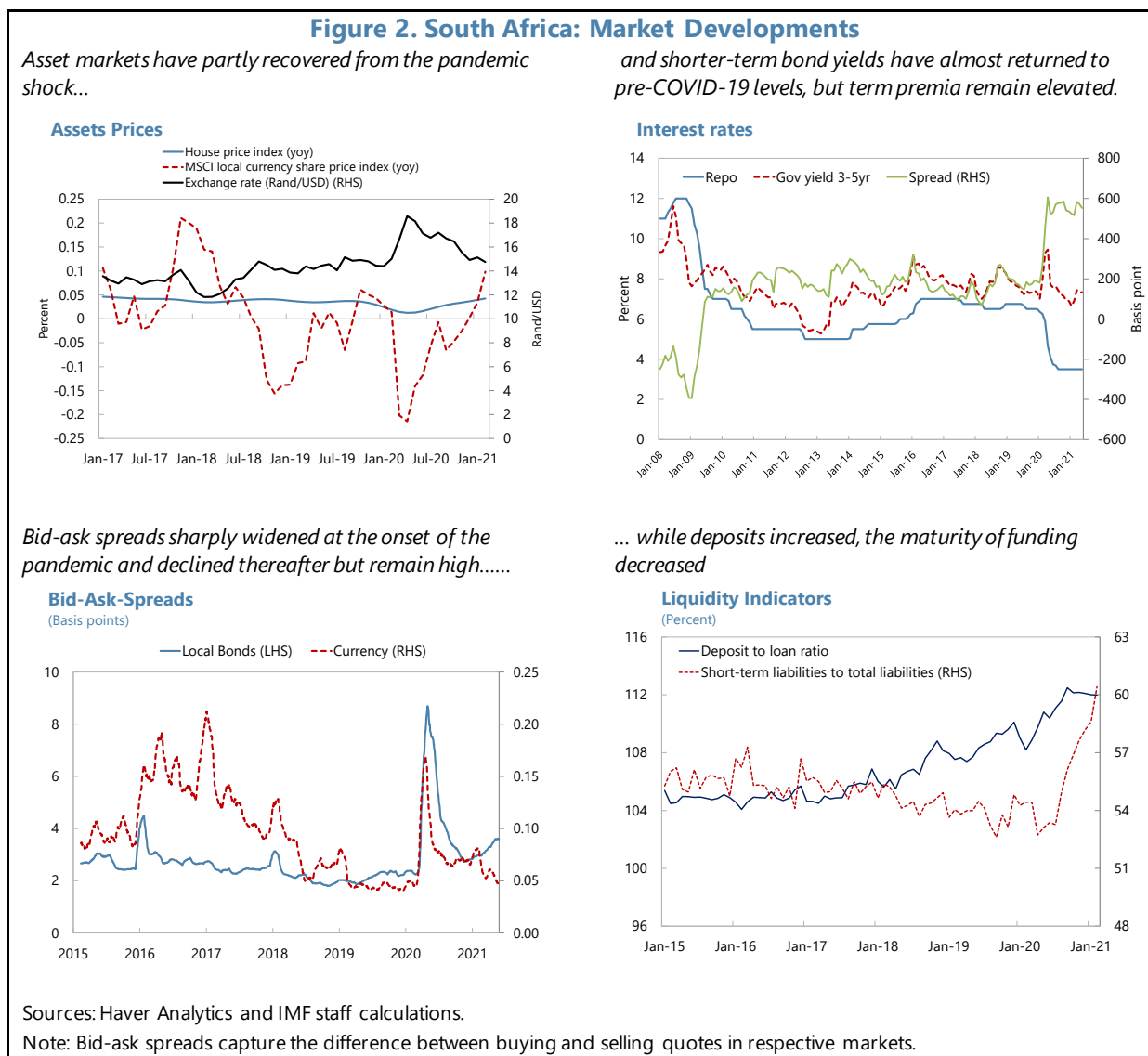


**2. Decisive action by the authorities helped dampen the immediate impact of the pandemic.** The global market sell-off in March 2020, coupled with the rating downgrade, resulted in capital outflows; a widening of the term spread to historical highs; declining financial asset prices; and temporary liquidity tightening in some money market segments (Figure 2). The authorities' financial sector policy response, broadly aligned with best practice,<sup>1</sup> sought to ease liquidity conditions, provide regulatory flexibility, and support affected borrowers (Figure 8).<sup>2</sup> As a result, bank lending held relatively steady and nonfinancial private sector debt-service-to-income remained stable despite economic activity contracting substantially. Domestic purchases of sovereign debt increased as nonresident investors reduced their holdings, with SARB's government bond purchase program helping to stabilize the bond market at the peak of the pandemic. Downside risks to

<sup>1</sup> Press releases from the Basel Committee on Banking Supervision, published in [March](#) and [April](#) 2020.

<sup>2</sup> Normalization of some regulatory measures has already been announced, e.g., [reinstatement of certain capital requirements](#) as of January 2022, directives on the withdrawals of [temporary liquidity measures](#) and the [temporary treatment of loans restructured due to the COVID-19 pandemic](#).

financial stability remain substantial, however, with recent developments surrounding the Omicron variant illustrating that COVID-19-related pressures continue to loom over the economy.<sup>3</sup>



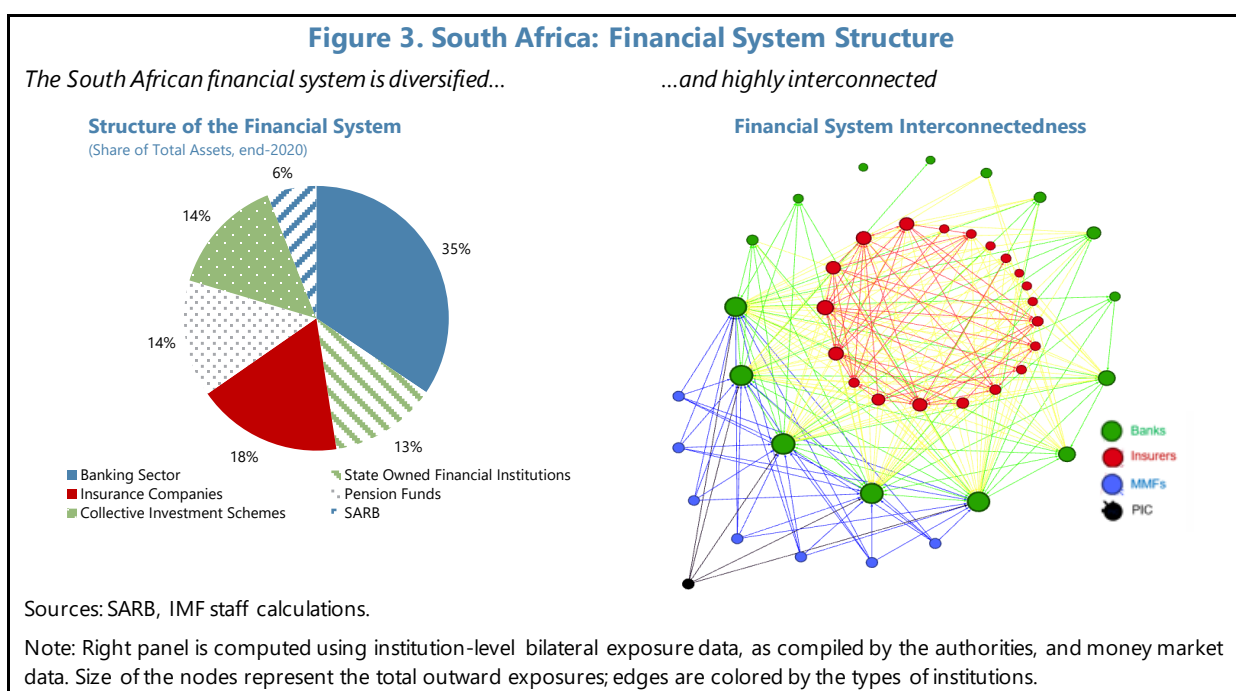
## B. Financial System Structure

**3. The financial system is large and complex.** Banks account for about 120 percent of GDP, with the five largest banks accounting for almost 90 percent of banking sector assets (Figure 3). The insurance sector is also highly concentrated, but insurance companies have an unusually diverse range of business models, with significant variation in risk profiles. Pension and investment funds represent a significant part of the financial system, with assets under management of almost 140 percent of GDP. South Africa has a small but growing fintech sector focusing primarily on payments, business-to-business support, and lending activities, with a sharp recent growth in crypto

<sup>3</sup> See Risk Assessment Matrix (Appendix II) and the 2021 Article IV Staff Report for key risks to the financial sector and real economy, including risks of U.S. inflation.

assets. Except for the Public Investment Corporation (responsible for managing public sector employee pensions), state-owned financial institutions are relatively small. Pan-African activities represent a small part of consolidated balance sheets, but operations are systemically important in many host countries.

**4. There are significant linkages within and across the different sectors.** Major banks are affiliated with insurance companies and fund managers; and bank-affiliated insurers underwrite a substantial proportion of private pension assets. Nonbanks are important liquidity providers as domestic savings are, to a large extent, channeled to pension funds, insurance products and investment funds and subsequently placed with banks as wholesale deposits. While prudential limits on foreign investments keep resident savings in the domestic financial system, individual institutions may still be susceptible to deposit migration if concerns about their resilience were to emerge.



## SYSTEMIC RISK ASSESSMENT

### A. Key Risks, Assessment Methods, and Scenarios

**5. The financial system has remained resilient throughout the pandemic, but risks are tilted to the downside.** In aggregate, bank capitalization remains comparable to pre-COVID levels, despite increasing credit risks, and liquidity ratios exceed regulatory requirements (which have been lowered during the pandemic). The domestic systemically important banks (D-SIB) remain well-capitalized in SARB's latest stress test.<sup>4</sup> Bank profitability has declined, and smaller banks have been particularly impacted by increasing provisioning costs and decreased non-interest income (Box 1).

<sup>4</sup> [Financial Stability Review 2021, second edition.](#)

The insurance sector's capital ratios remain well above regulatory minima but the inclusion of substantial future profits from existing policies, high lapse and surrender rates, and substantial exposure to equities—exceeding thresholds observed in other countries—raises some concern. Tepid business growth is weighing on insurers' profitability, and investment products with guaranteed returns could generate additional pressures if low interest rates persist (Figures 9 and 10).

### Box 1. South Africa: How Vulnerable Are Smaller Banks?

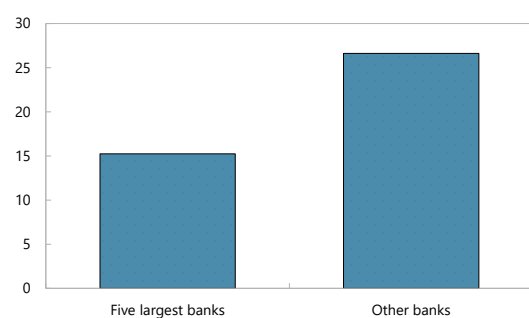
South Africa has a diverse banking sector, comprised of commercial banks, mutual and cooperatives, and foreign-owned branches. Performance of the large banks has been strong, but it has been more mixed for smaller banks, with weaker profitability and asset quality, and larger portfolio concentrations. Two small banks have failed in the past decade, albeit due to different factors.

Banks outside the top 5 represent about 10 percent of total assets, with equity capital of around 16 percent of total assets. Impaired loans tend to exceed that of the largest banks, with a few smaller banks reporting more than 20 percent of their portfolios as impaired. Smaller banks are proportionately larger holders of government debt (mainly longer-term bills, with lower duration risks) and use a standardized risk weight of zero—potentially understating sovereign risk. Some smaller banks rely heavily on wholesale deposits, and their reliance on nonresident foreign-currency and derivatives funding is relatively large (although this may reflect intragroup linkages with parent entities domiciled abroad). Smaller banks' vulnerabilities are also highlighted in the interconnectedness analysis, which suggests they could lose between 5–30 percent of their CET1 capital in a scenario of severe contagion. While fragilities in smaller banks are unlikely to pose systemic risks, close monitoring remains warranted.

(percent of total assets)	Impaired Loans	Non-resident FX and Derivatives Funding	Contingent Liabilities	Equity	Sovereign Exposures
Large 5	4.74%	4.69%	8.86%	7.09%	15.24%
Rest	16.48%	12.79%	15.81%	16.35%	26.62%

#### Sovereign Exposures

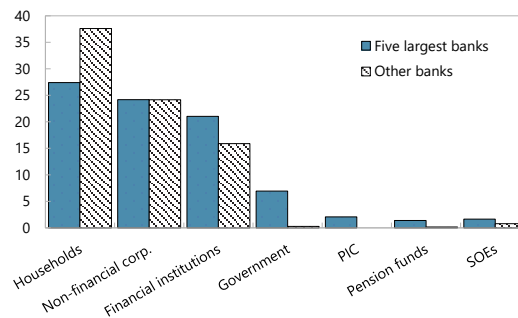
(Weighted Average as a Share of Total Assets)



Sources: SARB and IMF staff calculations

#### Funding Composition

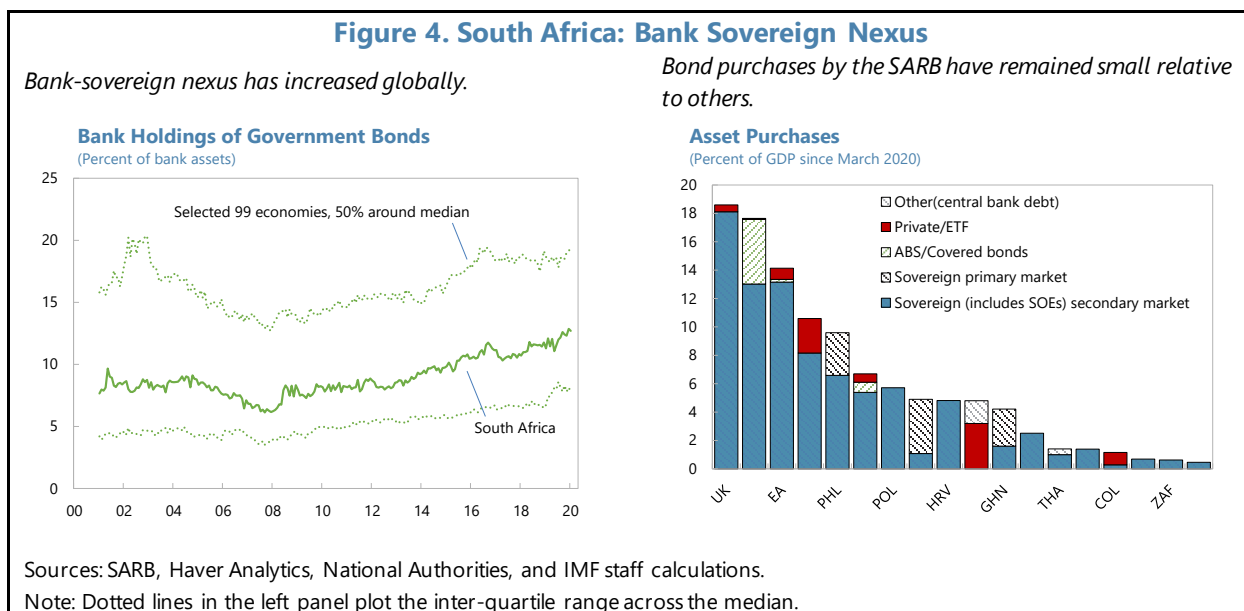
(Percent of Total Funding)



Source: SARB and IMF Staff calculations.

## 6. The increasing sovereign-financial sector nexus poses a growing financial stability risk.

Banking sector holdings of sovereign debt were broadly comparable to peers before the pandemic, but the nexus has strengthened more recently as nonresident investors have reduced their holdings, with domestic institutions picking up the slack (Figure 4).<sup>5</sup> Pension fund holdings have also increased, while holdings of insurers and investment funds have remained broadly stable. Although the pandemic has strengthened the nexus in many jurisdictions, high fiscal financing needs and volatile nonresident capital flows imply relatively larger risks for South Africa. Fiscal fragilities reduce the credibility of the sovereign backstop should financial sector distress materialize.



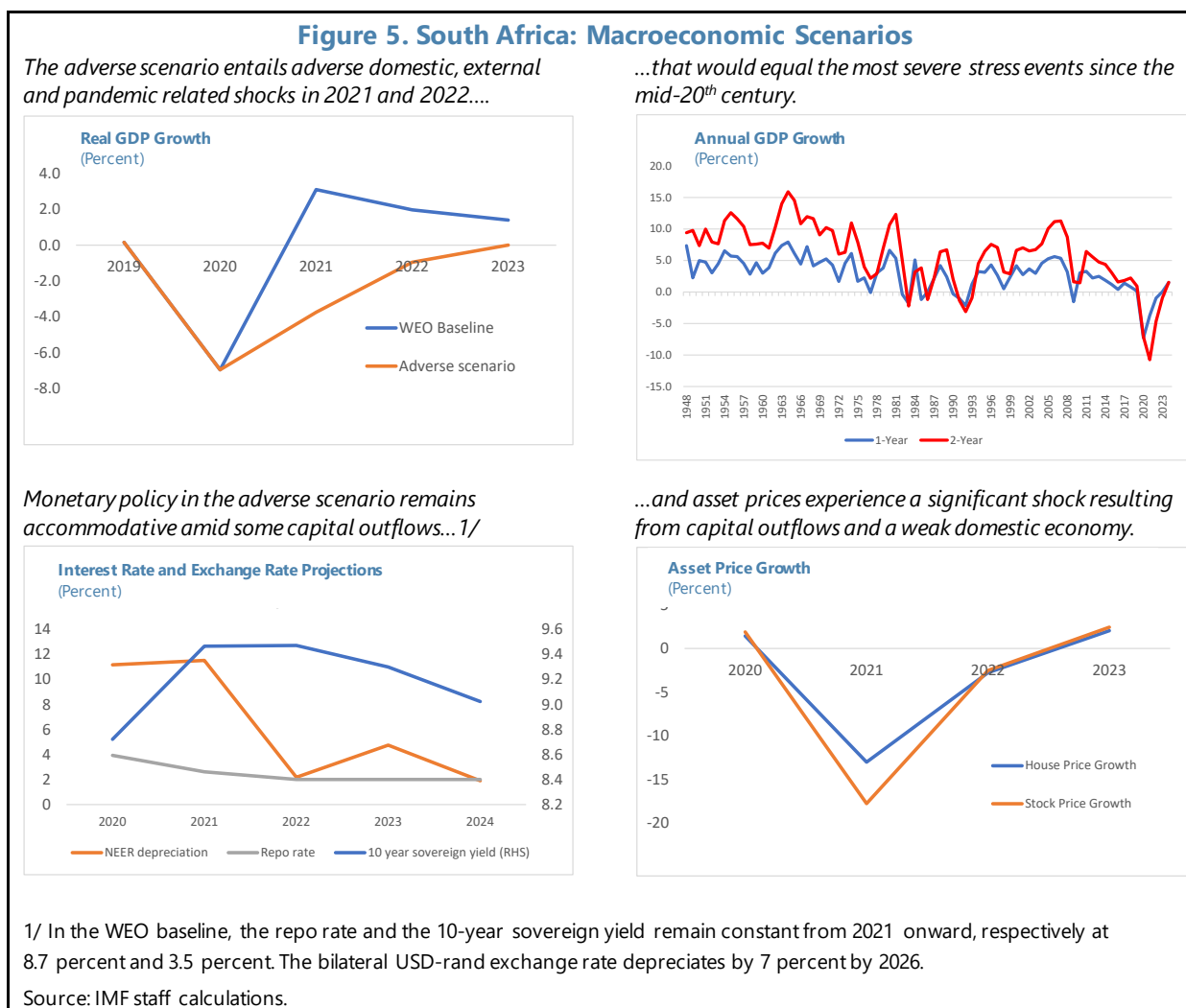
**7. Nonfinancial corporates (NFC) and households remain vulnerable.** At 40 percent of GDP as of Q4-2020, corporate debt is comparable to median peer countries but rising leverage (driven by tight financial conditions and weak profitability), risk concentrations, and relatively high obligations in foreign currency raise concerns—even though financial and natural hedges would attenuate some of the risks.<sup>6</sup> Corporate earnings are showing signs of improvement, and interest coverage ratios are slowly recovering from historically low levels observed during 2020. The corporate default ratio has declined below 3 percent, and corporate NPLs in banks' balance sheets have remained relatively stable. While banks' direct exposures to fragile SOEs are currently small, they may rise if markets become reluctant to hold SOE debt, and banks would face greater pressures to provide additional funding. Moreover, the benefit of government guarantees may diminish if fiscal fragilities continue to mount. Household finances came under severe strain during 2020, with aggregate disposable income dropping as employment reached its lowest point in the past decade. Default ratios for

<sup>5</sup> As of November 2021, domestic banks held around 20 percent of all outstanding domestic sovereign bonds, up from around 17 percent at end-2019. Insurance companies held another 7 percent (6 percent at end-2019).

<sup>6</sup> Bank lending to the corporate sector has grown by about 9 percent annually since 2014; borrowing via debt securities has been more volatile, with an average annual decline of about 2 percent over the same period.

banks' retail portfolios have approached levels observed during the global financial crisis but have since stabilized.

**8. The FSAP deployed various analytical tools to gauge the banking sector's susceptibility to shocks.** The solvency stress test is centered around the April 2021 WEO forecasts as baseline and an adverse scenario that was calibrated using macroeconomic modeling (Figure 5 and Stress Test Matrix in Appendix I). The adverse scenario captured four distinct risk channels, (i) a resurgence of the COVID-19 pandemic; (ii) de-anchoring of inflation expectations in the United States; (iii) protracted domestic uncertainty amidst reduced policy space and worsening confidence; and (iv) an intensification of the sovereign-financial sector nexus (also see the Risk Assessment Matrix in Appendix II). To gauge liquidity risks, the FSAP conducted cash flow analyses and assessed banks' observance of the liquidity coverage ratio (LCR) and net stable funding requirement (NSFR) under stressed assumptions, for aggregate currency positions and USD positions. Stress tests were supplemented by sensitivity analyses and counterfactual scenarios. Analysis on capital flow volatility, nonfinancial corporate vulnerabilities and climate change risks was also undertaken.





## B. Bank Solvency Stress Tests

**9. Solvency stress testing of banks revealed strong balance sheets in the baseline but serious decline in an adverse scenario.** The tests, using a three-year horizon, were conducted on financials for the six largest banks as of December 2020, using a Common Equity Tier 1 (CET1) hurdle rate of 4.5 percent. Simulations suggest that banks could recover well from the pandemic as economic activity rebounds but may face significant capital erosion if stressed conditions persist. Capitalization under the baseline scenario could improve by more than 200 basis points (bps), driven by improving net interest income; some reduction in risk-weighted assets (RWA) in 2021; declining provisioning costs; and modest losses on sovereign exposures. Under the adverse scenario, however, capitalization could decline by 250–340 bps, with an aggregate capital shortfall of 0.6–0.8 percent of GDP by 2023 and one bank breaching minimum requirements.<sup>7</sup> Capital erosion is driven by reduced net interest income as NPLs increase; elevated loan loss provisions; and losses on sovereign exposures (fair value through profit or loss or through other comprehensive income). Stress test results should be interpreted with caution, as the macroeconomic outlook remains subject to substantial uncertainty, and credit risks may evolve differently in the current environment from what is implied by historical patterns (Figure 14). Sensitivity analyses of real estate, and sovereign spreads and portfolio concentrations highlight further loss potential in a worsening environment. Concentration risk analysis reveals that the combined default of banks' five largest private sector exposures as of December 2020 could erode up to 10 percent of bank capital (Figure 15).

**10. Pandemic policies and responses by the industry appear to have provided temporary breathing space and helped protect bank capital since the start of the pandemic.**<sup>8</sup> Three counterfactual experiments were considered, involving (i) adjusted probability of default (PD) calculations to strip out the potential moderating effect of pandemic policies; (ii) a simulated migration of 1/3 of the remaining stock of COVID-19 restructured exposures to nonperforming loans; and (iii) lower deposit rates offered by banks experiencing large declines in net income lower to improve spreads. The first two counterfactuals point to additional recapitalization needs of 0.3 and 0.15 percent of GDP, respectively by 2023, suggesting that COVID-19 policies have supported capital buffers. The modeled pricing mechanism in the deposit market would help reduce the computed capital shortfall by 0.1 percent of GDP in 2023.

## C. Bank Liquidity Stress Tests

**11. Analysis of liquidity indicators show that the large banks have been well-funded since the COVID-19 outbreak, notwithstanding some vulnerabilities in their funding profiles.** The loan-to-deposit ratio and the ratio of liquid assets to liquid asset requirements improved in 2020 and liquidity coverage ratios (LCR) remain above SARB's requirements. Deposit growth has been steady, driven by call deposits, and banks' net open foreign exchange (FX) positions have remained

<sup>7</sup> Two versions of the adverse scenario were considered, using different calibrations of the satellite models linking deposit rates and lending rates to macroeconomic conditions.

<sup>8</sup> Both relief for restructured loans and the liquidity ratio are now set to expire in April 2022.

largely unchanged. However, short-term liabilities have increased as a share of total liabilities. Wholesale funding and NFC deposits may be less stable in the event of idiosyncratic concerns, although prudential limits on foreign investments limit capital flight risks.

## 12. Liquidity stress tests suggests that some banks may be vulnerable to liquidity shocks (Figure 16):

- *LCR analysis.* While all banks met the Basel LCR requirements at the onset of the pandemic, some saw their ratios decline below the Basel requirement, in line with the regulatory flexibility afforded by the PA.<sup>9</sup> Simulations entailing larger shocks than those envisaged under the Basel rules would result in some banks having LCR ratios below the Basel threshold. While the LCR is expected to be met in a single currency, a breakdown by currency conducted by the FSAP team suggests that multiple banks are vulnerable to USD-related funding pressures, although FX exposures are relatively small.
- *Cash flow analysis.* In aggregate, the banking system faces a small net funding gap of some 2 percent of assets at 1–7 days maturity under the baseline, concentrated in 2 banks. The funding gap widens to about 10 percent at these maturities under a severe scenario. Two banks show modest net funding gaps at longer maturities as well.
- *Net stable funding ratio (NSFR).* While all banks meet the NSFR threshold under the PA's regulatory parameters, two banks' NSFR are slightly below 100 percent if Basel III parameters are applied.<sup>10</sup>

## D. Nonbank Risk Analysis: Insurers, Fund Managers, and Pension Funds

**13. The pandemic's impact on the insurance sector has been muted; revisions to prudential rules could further strengthen the sector.** Investment losses and elevated lapse and surrender rates prompted a sharp fall in life insurers' profitability in the first half of 2020, but profitability stabilized as capital markets recovered. While solvency ratios remain high, inclusion of sizeable future profits from existing policies into Tier 1 capital pose a vulnerability. Solvency ratios benefited from higher yields of South African government bonds, which reduced the value of long-term insurance liabilities. The impact of IFRS 17 on the insurance sector's solvency ratios should be carefully monitored.<sup>11</sup>

**14. Investment funds' assets under management (AuM) continue to grow.** Money market funds (MMFs) experienced over 90 billion Rand inflows during 2020 notwithstanding their vulnerability to large redemptions—as briefly observed at the onset of the pandemic, when some

<sup>9</sup> [Temporary measures to aid compliance with the liquidity coverage ratio during the Coronavirus pandemic stress period.](#)

<sup>10</sup> The PA has assigned an Available Stable Funding (ASF) factor of 35 percent to some liabilities—as compared to an ASF factor of 0 percent used in the Basel requirements—in view of the observed stability of these funding sources.

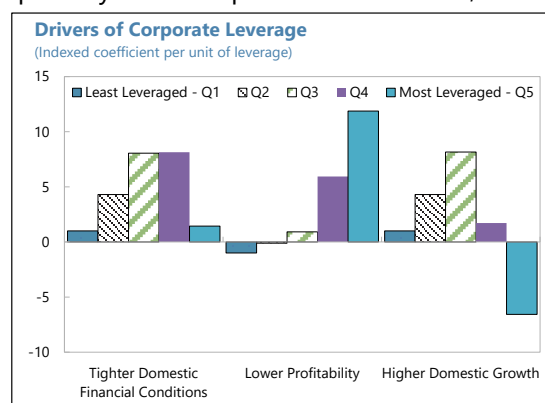
<sup>11</sup> IFRS 17 provides consistent principles for the accounting of insurance contracts. It removes existing inconsistencies and seeks to foster meaningful comparability of companies, contracts, and industries.

MMFs faced (short-lived) liquidity pressures. Within MMFs, exposures to financial institutions declined significantly during 2020, while exposures to government and public entity paper rose sharply—reaching almost 20 percent at end-2020. Private pension funds faced modest declines in valuations during 2020, but portfolios of the Public Investment Company (PIC)<sup>12</sup> proved more resilient.

## E. Macrofinancial Linkages: Households and Corporate Sector

**15. Households have strong buffers, but indebtedness warrants attention, particularly among lower-income borrowers.** Household finances have improved in recent months, as real disposable income is recovering from the COVID-related decline, but South Africa’s household debt ratio remains elevated relative to emerging market peers, with significant wealth inequality potentially masking pockets of vulnerabilities. National Income Dynamics Study data signals debt-related vulnerabilities for lower-income households whose indebtedness is low in absolute terms, but relatively high when assessed relative to income (Figure 12). Interest rate reductions and loan restructurings have helped alleviate the impact of COVID-19, but pressures may (re)emerge as policies are normalized and/or if the pandemic resurges. Going forward, a central credit register could help inform financial stability analysis, while supporting better credit risk monitoring by banks.

**16. Corporate stress testing and comparative analyses conducted by the FSAP confirm elevated vulnerabilities.** Scenario-based stress tests of publicly listed corporates and Eskom, the electricity public utility, suggest that in the baseline scenario, firms with interest coverage ratios (ICR) < 1 would represent 30–35 percent of outstanding corporate debt in 2021 and 2022.<sup>13</sup> Under the adverse scenario, almost 40 percent of firms, accounting for than 40 percent of the debt stock in 2022, would remain vulnerable with an ICR < 1. Under the adverse scenario, vulnerabilities of large corporates can translate into significant credit risks for the banking system (Appendix III).



## F. Interconnectedness

**17. Sectoral contagion risks appear limited in all but the most extreme scenarios, despite high interconnectedness.** Increasing inter-bank and inter-insurance exposures indicate that the financial system has become more interconnected since the last FSAP. Simulations of the impact of cascading defaults identify the D-SIBs as the primary source of potential domestic contagion, with capital erosion largely stemming from one bank. Smaller banks are more vulnerable to cascading shocks than larger institutions (Figure 17). Spillovers within the insurance sector are concentrated in

<sup>12</sup> PIC, Africa's largest asset manager, is responsible for investing the South African Government Employees Pension Fund.

<sup>13</sup> This corresponds to 25–35 percent of firms in the sample used for the corporate stress test.

a few institutions, with multi-round failures generating modest capital losses. Generally speaking, life insurers are more impacted than non-life insurers.

**18. Cross-sectoral linkages are an important source of contagion.** Banks' reliance on funding from insurers is high by global standards, and funding from investment funds ranks one of the highest amongst emerging market peers. Contagion risks are also relevant for money market funds, where almost 90 percent of the total assets are concentrated within the large banks. In the adverse scenario, cross-sectoral exposures led to multiple rounds of cascading defaults and indirect spillovers, substantially increasing the magnitude of spillovers. Most of the cross-sectoral exposure resides in the large banks, making them more vulnerable to shocks from the rest of the financial system.<sup>14</sup>

**19. Banks' regional exposures can fuel cross-border spillovers.** Foreign banking sector claims have increased by almost nine times since the last FSAP, with exposures to the SSA region accounting for almost 30 percent thereof (vis-a-vis 20 percent in 2014). The growth in the region's contribution of total revenues for the South African banking sector (currently 15 percent, up from 10 percent in 2014) has increased the system's susceptibility to potential inward spillovers. At the same time, claims on South African parents (which account for 10–30 percent of host countries' GDP in some cases) pose risks to financial stability in host jurisdictions, underscoring the importance of maintaining robust buffers (Figure 18).

## G. Capital Flows

**20. Since the last FSAP, capital flows to South Africa have become increasingly volatile.** Trends reflects the interplay between a higher-than-average sensitivity to external shocks, and a deep domestic investor base that offsets this volatility. Nonresident portfolio debt flows are predominantly in local currency, which makes them highly sensitive to domestic macro weaknesses, as well as external shocks.<sup>15</sup> The drop in foreign participation in the domestic market in South Africa—ahead of the March 2020 sovereign credit rating downgrade and further exacerbated by the pandemic—was absorbed by domestic investors, with SARB's purchases in the secondary market partly enabling domestic banks to absorb primary debt issuances.

**21. Capital-flows-at-risk analysis shows that the drivers of flows to and from South Africa vary significantly across the type of capital flows.**<sup>16</sup> Nonresident portfolio equity flows and direct investment flows are more sensitive to domestic fundamentals, with a higher impact during surges, while nonresident portfolio debt flows are primarily driven by external risk appetite.<sup>17</sup> Flows to the sovereign bond market are more affected by global risk aversion shocks while flows to the corporate

<sup>14</sup> The interconnectedness analysis is primarily focused on direct and indirect balance sheet exposures, without taking other contagion channels (e.g., fire sales, common exposure sell-offs) into account.

<sup>15</sup> Chapter 3 of the [Global Financial Stability Report, April 2020](#).

<sup>16</sup> [Global Financial Stability Report, April 2018](#).

<sup>17</sup> The results are broadly in line with EM-wide results found in GFSR April 2020, as well as trends observed during the COVID-19 sell-off (as discussed in the GFSR for April 2021).

sector are more sensitive to domestic growth shocks. Resident flows, and particularly foreign direct investments, act as a strong buffer against nonresident outflows during periods of global risk aversion (Figure 19).<sup>18</sup> The analysis illustrates how persistent macro weakness and global risk volatility can impact financial stability through the capital flows channel.

## H. Climate Change Risk Analysis

**22. Climate change has a potential negative impact on the banking sector.** The country's arid climate, geographical position and high dependence on fossil fuel production and consumption renders it vulnerable to both physical and transition risks. Physical risks largely stem from severe droughts, with several banks having relatively large exposures to drought-sensitive sectors in affected provinces, and insurance companies facing increased underwriting risks.<sup>19</sup> Transition risks area also notable, both from a technology perspective and a policy dimension due to high carbon emissions and a large carbon pricing gap.<sup>20</sup>

**23. Analysis of stress testing of climate risks points to non-negligible implications for the financial sector:**

- *Physical risks.* Difference-in-difference econometric analysis suggests that banks already assign significantly higher PDs (about 5 percentage points on average) to sectors more vulnerable to water shortages in affected provinces (Figure 20). Underwriting risks, however, appear manageable due to the relatively small and geographically diversified exposures of insurers.
- *Transition risks.* Using firm-level data, the stress tests utilized two scenarios, one focusing on the technological transition to green energy which estimates the incremental increase in expected default frequency and defaulted debt from permanently higher electricity prices; and one that seeks to estimate the increase in production costs resulting from a carbon tax increase (absent any pass-through to end users). Results suggest that a shift from coal-based energy production could contribute to sustained price hikes that can squeeze NFCs' margins and increase credit risks. A rapid carbon price increase to a mid-point estimate needed to stabilize emissions could, under severe assumptions, result in a doubling of corporate debt at risk.

<sup>18</sup> Also see Goel and Miyajima, [Analyzing Capital Flow Drivers using the 'At-Risk' framework: South Africa's Case](#), IMF, 2021.

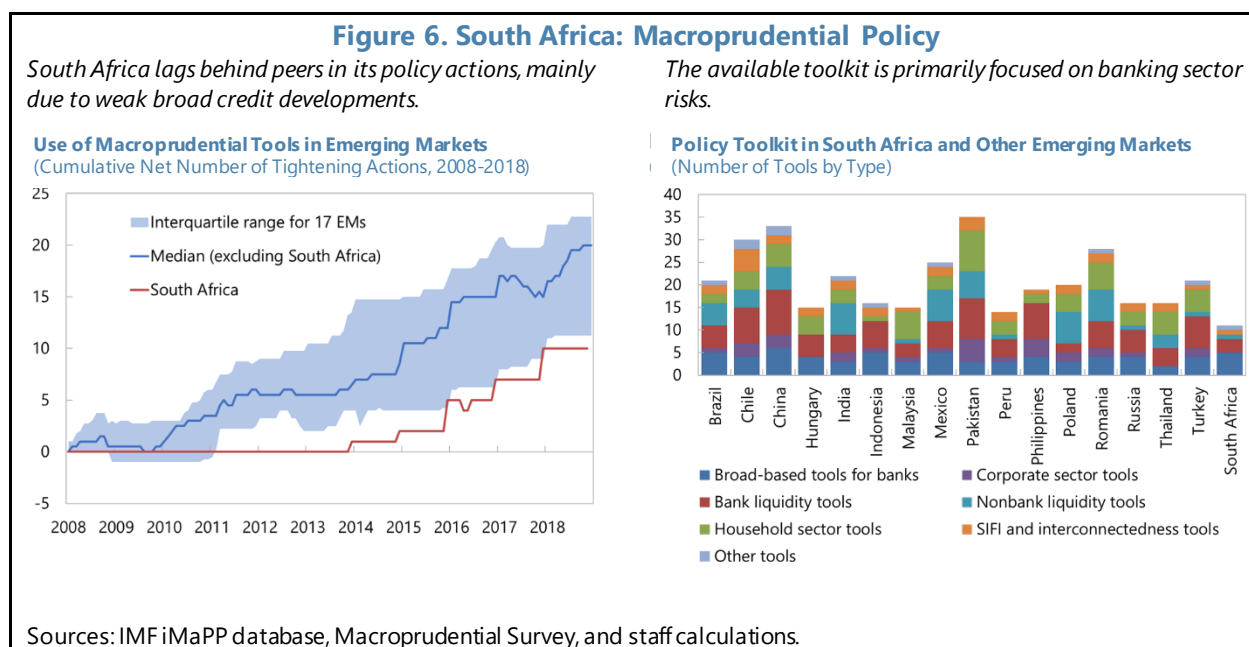
<sup>19</sup> The International Disaster Database (<https://www.emdat.be>) indicates drought is the most macro-relevant weather event in South Africa.

<sup>20</sup> The OECD defines the 'carbon pricing gap' as a measure of the difference between effective carbon rates and benchmark rates, to show how much countries fall short of pricing emissions in line with levels needed for decarbonization.

## FINANCIAL SECTOR OVERSIGHT

### A. System-Wide Oversight and Macroprudential Policies

**24. Institutional arrangements for managing systemic risks are in place, but powers could be expanded.** The SARB is the designated macroprudential authority, with the Governor—advised by the interagency Financial Stability Oversight Committee (FSOC) and SARB’s internal Financial Stability Committee (FSC)—the main decision-maker. While this setup is likely to support the authorities’ willingness to act, the ability to do so is somewhat constrained as SARB’s hard powers are mostly limited to systemically important financial institutions, as identified by the Governor. To attain more wide-ranging authority, the Governor must designate an event ‘systemic,’ which can be associated with stigma and unintended side-effects. Ensuring that SARB has adequate powers without the need for such designation would improve the use of macroprudential measures and reduce the risk of adverse market reaction.



**25. SARB’s monitoring capacity is well-advanced, albeit with some data gaps; but the macroprudential toolkit could be expanded.** SARB relies on a variety of macrofinancial indicators (summarized in a heat map), stress tests, and analytical tools, and publishes a Risk and Vulnerabilities Matrix as part of its Financial Stability Review (FSR). However, analysis of tail risks and calibration of borrower-based tools is hampered by limited access to micro data; and the toolkit for nonbanks lags that of international peers (the toolkit for banks is broadly sufficient). As noted earlier, the adoption of measures to alleviate the sovereign-financial nexus could be considered to further strengthen system resilience (Appendix IV).

## B. Systemic Liquidity Management

**26. The SARB’s framework for systemic liquidity management functions well, with opportunities for improvement with additional tools.** SARB follows financial market developments closely and has the ability and track record of managing system-wide liquidity needs. There is room to develop the repo market by improving the collateral management system, moving toward more favorable regulation and the more widespread use of classic repo under the Global Repo Master Agreement. Planned revisions of SARB’s overnight benchmark interest rate should be completed as soon as practicable. Reform proposals outlined in SARB’s consultation paper are welcome and should help promote pricing efficiency in the domestic financial markets.<sup>21</sup>

**27. SARB’s framework for the provision of emergency liquidity assistance (ELA) can be further strengthened.** New internal guidance for liquidity support to banks that have become (or are expected to become) non-viable helps to ensure policy consistency.<sup>22</sup> Additional guidance is needed on the extension of liquidity to solvent but temporarily illiquid banks, outside of resolution—including strengthened capacity to undertake solvency and viability assessments. In due course, legal changes remain advisable to fully align the legislation with best practices.<sup>23</sup>

**28. A gradual migration of NT’s operational and liquidity balances from the largest banks to SARB would reduce risks.** Outstanding balances reinforce the too-big-to-fail conundrum, generate competitive distortions, and can undermine asset allocation as sizable withdrawals may not be possible without jeopardizing banks’ liquidity positions. Distributing cash balances among a larger group of banks, as part of a diversification strategy, can complicate cash management and is not recommended.

## FINANCIAL SUPERVISION AND REGULATION

**29. South Africa has a robust regulatory framework, underpinned by an overhauled supervisory architecture.** Since the 2018 implementation of the Twin Peaks’ model (Appendix V), prudential regulation and supervision of banks, insurance companies and market infrastructures are conducted by the Prudential Authority (PA), operating autonomously within SARB’s administration. The Financial Sector Conduct Authority (FSCA) is responsible for market conduct regulation and supervision of market participants and structures, as well as prudential supervision of pension schemes and investment funds. The National Credit Regulator (NCR) regulates the consumer credit industry. Responsibilities for anti-money laundering and combating the financing of terrorism (AML/CFT) are discharged through the Financial Intelligence Center Act, mandating supervisory bodies to ensure compliance with its requirements.

<sup>21</sup> [Consultation paper on selected interest rate benchmarks in South Africa.](#)

<sup>22</sup> SARB defines ELA as liquidity assistance provided to a bank that has either been placed in resolution or that is approaching resolution (i.e., expected to be put resolution in the near future).

<sup>23</sup> Also see the findings of the 2014 FSAP on ELA in [IMF Country Report No. 14/340.](#)

**30. The FSAP reviewed the regulatory frameworks and supervisory practices for all segments of the financial system.**

- *Banking.* The regulatory framework for banks is strong, with the adoption of enhanced capital and liquidity standards having proved fortuitous as the COVID-19 crisis hit. The PA is currently working strengthen requirements on corporate governance, large exposures, transactions with related parties, and the treatment of problem assets. To enhance effectiveness and resilience, the PA should (i) pivot towards a more structured and intrusive approach, with a recalibrated mix between on-site and off-site supervision and an expansion of risk specialists and a greater focus on governance and credit, liquidity and other significant risks; (ii) reduce reliance on external auditors; (iii) introduce a structured framework for early intervention; and (iv) further influence industry behavior by clarifying supervisory expectations.
- *Insurance.* The introduction of the risk-based Solvency Assessment and Management framework (SAM) and establishment of group-wide supervision are key milestones for the insurance sector. However, discount rates of insurance liabilities under SAM are calibrated from sovereign bond yields without credit risk adjustments. Insurance supervision would benefit from enhanced monitoring, industry-wide stress testing, and impact studies of IFRS 17 adoption; with a stronger focus on investment risks for life insurers' high exposure to equities, and greater scrutiny of the quality of capital resources (i.e., in view of the inclusion of substantial future profits from existing policies); and potential liquidity risks associated with high lapse and surrender rates.
- *Fund management.* Over the last four years, important reforms of the regulatory framework have been initiated, with the envisaged adoption of the Conduct of Financial Institutions (COFI) Bill as cornerstone. Potential improvements relate to conflict-of-interest rules for investment fund managers, accounting principles and disclosure requirements, and capital requirements and risk management rules for OTC Derivatives Providers. The forthcoming adoption of Conduct of Business Standards should provide further impetus to conduct supervision, including by addressing regulatory gaps and providing the FSCA with additional powers.
- *Pensions.* The legal framework and supervisory approach for the pension sector should be updated to address long-standing governance problems in the sector and guard against any use of pension assets not in line with the best interests of policy holders. Detailed regulations are needed in several areas (e.g., valuation, use of derivatives), risk-based supervision should be strengthened to support timely intervention in poorly managed funds and pension fund governance warrants further improvement. While pension funds, as long-term investors, should be encouraged to invest in infrastructure projects, investment policies should be firmly grounded in good governance and the best interests of policy holders.

**31. In addition, the FSAP conducted targeted reviews of the authorities' supervisory and regulatory practices pertaining to fintech, cyber resilience, and climate change.**

- *Fintech.* The SARB is championing legal reforms that will allow nonbank fintechs to issue e-money and offer payment services; enable nonbank payment service providers to access central



bank settlement services, subject to appropriate risk management measures; and transfer all regulatory powers to the SARB. Interim measures to enhance monitoring and supervision of the fintech sector are needed while the ambitious reforms are finalized, with a particular focus on data collection and monitoring of developments outside the regulatory perimeter.

- *Cyber resilience.* The development of a cross-sectoral framework for cybersecurity, based on binding prudential standards, combined with an increased intensity and frequency of onsite examinations, would aid resource allocation and ensure consistency in cyber risk management. Moreover, amendments of the NPS Act are needed to formally adopt the CPMI-IOSCO Principles for Financial Market Infrastructures (FMI) and establish adequate regulatory, supervisory, and oversight powers for SARB. Service providers should be assessed against the CPMI-IOSCO Assessment Methodology for Oversight Expectations Applicable to Critical Service Providers.
- *Climate change risks.* Since joining the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) in 2019, SARB has sought to increase the industry's focus on climate change risks. Further efforts to expand climate change risks in stress testing and supervision remain important, including by issuing guidelines on climate risk management, governance, and disclosure; and integrating climate change risks in supervisory dialogue, onsite inspections, and supervisory ratings.

**32. South Africa has a solid legal framework for AML/CFT but needs to pursue money laundering (ML) and terrorist financing (TF) more proactively and improve the implementation of a risk-based approach.**<sup>24</sup> South Africa has suffered from a sustained period of 'state capture,' resulting in substantial corruption proceeds and some key AML/CFT agencies being undermined. Remedial efforts are in train, but further steps remain necessary to pursue ML and TF, in line with the country's risk profile. The application of a risk-based approach to AML/CFT by businesses and supervisors should be improved, market entry controls strengthened, and the gap in sectoral coverage closed—notably by extending the perimeter to virtual assets service providers.

## CRISIS MANAGEMENT AND FINANCIAL SAFETY NETS

**33. Reforms of the financial safety net that have been pending for multiple years should be brought to a swift conclusion.** Draft amendments, first published in 2018,<sup>25</sup> are expected to strengthen the framework for dealing with failing banks, by designating SARB as resolution authority for banks and systemically important nonbank financial institutions, introducing new resolution powers, and establishing a deposit insurance scheme (DIS).<sup>26</sup> The authorities should (i) prioritize the

<sup>24</sup> Fund staff led the latest assessment of South Africa's AML/CFT system against the 2012 Financial Action Task Force (FATF) 40 Recommendations in 2019, which was adopted by the FATF and the Eastern and Southern Africa Anti-Money Laundering Group in 2021 as South Africa's latest [Mutual Evaluation report for South Africa](#).

<sup>25</sup> [Financial Sector Laws Amendment Bill](#).

<sup>26</sup> The [Financial Stability Board's Peer Review for South Africa](#), published in March 2020, found that "...The authorities have applied the lessons from recent bank failures to inform the proposals for adoption of a resolution regime broadly

(continued)

adoption of the legislation and continue efforts to operationalize it (e.g., develop a resolution manual, build payout capabilities for the DIS, ascertain ‘single customer view’ deposit data); (ii) advance preparedness through resolvability assessments and resolution planning (notably for systemically important institutions), and conduct recurrent simulation exercises; and (iii) finalize loss-absorbing requirements for systemic banks.<sup>27</sup> Considering the challenges associated with bail-in, the authorities are also advised to establish a mechanism for the provision of temporary public funding to facilitate resolution, sourced from NT and subject to strict preconditions that minimize moral hazard. To strengthen the DIS’ funding structure—considering that partial reliance on interest-bearing deposits from the banks increases costs and can fuel procyclicality if banks would be required to account for impairments following bank failures—the authorities should consider determining a funding target for the (nonrepayable) ‘equity’ tranche, to be met via *ex ante* industry contributions.

**34. The D-SIB’s pan-African footprint sets a high bar for cross-border cooperation.**

Building on supervisory initiatives for home-host collaboration, the authorities should promote close cooperation on recovery and resolution planning. Existing memoranda of understanding should be expanded with crisis management protocols, and SARB could initiate cross-border crisis management exercises to help build capacity across the region. The authorities should satisfy themselves that framework conditions for effective cross-border cooperation are in place (e.g., information exchange, obligations to consider the cross-border impact of resolution actions, processes to give effect to foreign resolution measures).

## FINANCIAL SECTOR DEVELOPMENT

### A. Competition and Efficiency

**35. Substantial market concentration and high entry barriers have resulted in sizable costs for end-users.** Increased banking sector competition, including via ‘digital’ banks, seem to have contributed to some price convergence, but transaction costs remain relatively high. Initiatives to increase competition and contestability—e.g., by promoting cooperatives and mutual banks that are subject to proportionate legal and regulatory frameworks—could help but their overall impact is still to be determined. ‘Open Banking’ reforms and steps to allow limited banking businesses (e.g., payment services) under a simplified oversight framework—without diluting necessary safeguards to ensure financial stability—may be considered as a way to foster competition and ultimately further reduce costs.

**36. Amendments of the FMA are important to improve capital market competition and in turn support nonbank financing.** Similarly, further development of the Electronic Trading Platform (ETP) for government bonds—which has improved pricing transparency and price formation—is

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*aligned with the FSB Key Attributes of Effective Resolution Regimes for Financial Institutions, while proposals for the introduction of a deposit insurance system demonstrate their commitment to implement the IADI Core Principles for Effective Deposit Insurance Systems.”*

<sup>27</sup> A [discussion paper](#) was published by SARB in May 2021.

advisable to improve market efficiency. The ETP could provide a platform for market making to increase trading volumes and support a more developed yield curve, which in turn could help derive a reliable and low 'risk-free' price-reference for non-government bonds.

## B. Financial Inclusion and Access to Finance

**37. Usage of digital financial services and access to finance by small firms could be further advanced.** While approximately four in five adults have a bank account, utilization of accounts and digital payments is much lower. The share of bank lending to small and medium enterprises (SME) continues to decline (Figure 22), with less than four percent having a credit line. Estimates of the credit gap between supply and demand are substantial, varying between 9 and 15 percent of GDP (Figure 22). A reform of the secured transactions framework and further efforts to reduce persistently high rates of credit impairment—through improved credit bureau reporting, and innovations in creditworthiness assessments using alternative data—can also help expand access to finance.

**38. Implementation of the authorities' fintech 'vision' document can yield substantial benefits.** Fintech developments are prompting incumbent banks to direct new products to unbanked and underbanked individuals and SME and are facilitating the purchase of insurance products. The authorities have launched initiatives to deepen their understanding of fintech developments but could take further steps to actively encourage fintech solutions—for example by using the sandbox to call for solutions to specific inclusion challenges and enabling nonbanks to provide payment services (as proposed by SARB).

## C. Market Development

**39. Efforts to improve the domestic repo and money markets should continue.** The unsecured nature of the interbank market unnecessarily increases credit risk and tends to exclude banks that are perceived to be weaker. SARB is looking into several near-term measures to improve market liquidity, such as improving interoperability between settlement systems operated by SARB and Strate, the privately operated central securities depository; introducing additional NBFIs as participants to the repo market; and enhancements to the collateral management system. [Improvements in the issuance strategy for treasury bills would also be welcome, as would harmonization of the tax treatment of buy/sell and classic repos and introducing T-bill market-making requirement for primary dealers].

**40. The authorities should explore ways to support green investments.** NT published a roadmap on Financing a Sustainable Economy in 2020, with subsequent work geared toward providing a comprehensive framework for achieving climate targets.<sup>28</sup> To support implementation, the authorities should seek to improve the business case for green projects by providing clarity on credible, long-term climate and energy plans; advance work on a National Climate Finance Strategy;

<sup>28</sup> NT's Technical Paper [Financing a Sustainable Economy](#), 2020.

foster transparency through climate risk disclosures and a green taxonomy; stimulate the use of green finance instruments; and implement NT's National Disaster Risk Finance strategy.

## AUTHORITIES' VIEWS

**41. The South African authorities appreciated the engagement with the FSAP team, which took place over an extraordinary period of economic uncertainty.** They are gratified that the findings of the FSAP align with their own both in terms of risk outlook and priorities for work going forward. As the FSAP acknowledges, the authorities have made great progress implementing reforms in the financial sector since the last FSAP and have successfully implemented much of the ambitious global reform agenda set out after the global financial crisis, as well as additions of the authorities' own including a focus on financial inclusion and market development. The authorities noted that they were promoting fintech to improve efficiency and enhance financial inclusion, were pivoting to address the challenges of climate risk, and were embracing the new opportunities of sustainable finance.

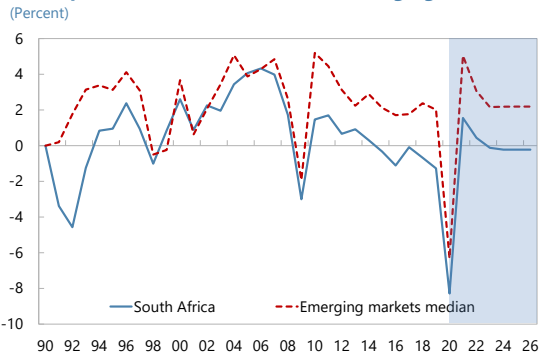
**42. The authorities pointed to the solid achievements by both the public and private sector in building financial sector resilience evident in the sector's ability to withstand the shock of COVID-19, which triggered the largest output contraction since 1947.** The authorities noted that, as the FSAP points out, banks and nonbanks remain well capitalized and liquid and while temporary support measures were put in place to mitigate the negative impacts of the shock—including regulatory changes to promote restructuring and capital and liquidity relief—these measures were being gradually phased out. The steady decline in outstanding COVID-19 restructured exposures to below 1 percent of total exposures (vis-à-vis about 12 percent in July 2020) was indicative of the normalization of credit risk in banks' portfolios. Importantly, the financial industry remained profitable and was throughout the crisis—in contrast to many other financial systems.

**43. The authorities noted that the SARB's November 2021 FSR outlined rising risks to the financial sector including the ongoing uncertainty of the pandemic, weak economic growth, tightening global financial conditions, fiscal laxity, and social unrest.** The FSR pointed to a rising sovereign financial nexus, in line with the FSAPs analysis. The authorities were assessing policy options to address the risk. As the report recognized, the supervisory authorities' operational independence has aided their efforts to monitor and address risks to financial stability. The authorities emphasized their commitment to further the work reform areas outlined by the FSAP. They noted that the prudential framework for insurers was in line with global standards and expected the implementation of IFRS 17 will be smooth. Additional strengthening of the regulatory and supervisory framework, including on cybersecurity, climate risk, and market conduct, were in their view, in progress. Strengthening the financial safety net via the introduction of a modern resolution regime and a deposit insurance scheme was a priority along with the work modernizing payment systems, with a view to providing South Africans with safe and competitive financial services based on new and emerging technologies.

**Figure 7. South Africa: Macroeconomic Context**

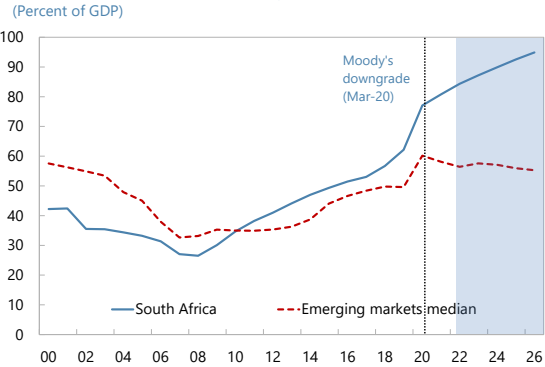
*Per-capita GDP growth has consistently lagged other emerging markets...*

**Per Capita GDP Growth in Selected Emerging Economies**



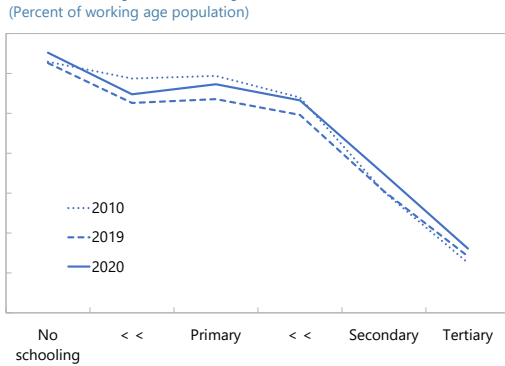
*... while government debt is projected to sharply deviate from international peers if key reforms are not undertaken.*

**General Government Debt (gross)**



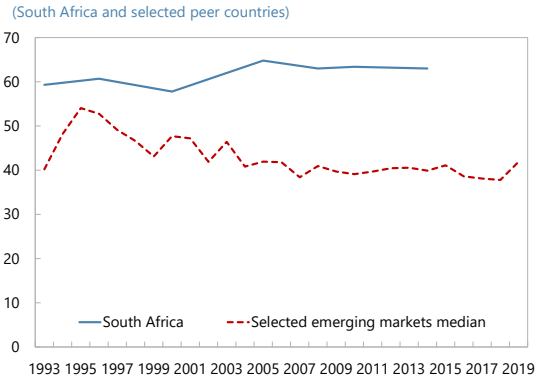
*Labor participation rates continue to deteriorate...*

**Economically Inactive by Educational Attainment**



*...and South Africa has become one of the most unequal societies in the world.*

**Gini Index**



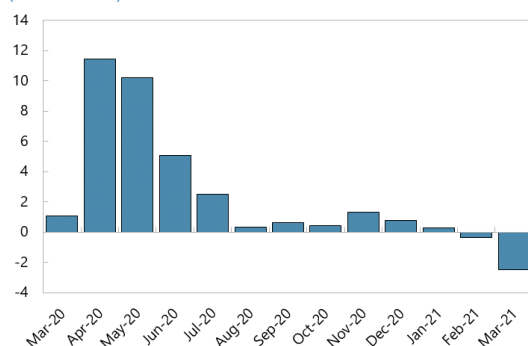
Sources: WEO, World Bank, and IMF staff calculations.

**Figure 8. South Africa: Temporary Measures to Offset the Impact of COVID-19**

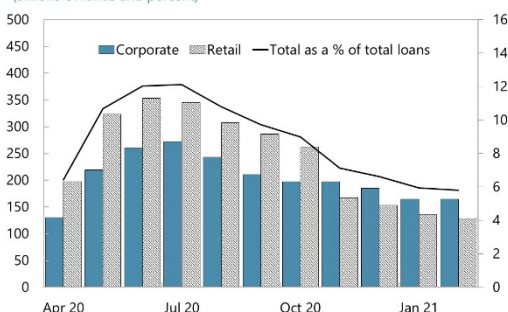
Monetary Policy Operations	Regulatory Relief
<ul style="list-style-type: none"> <li>• Policy rate cut by a cumulative 275 bps to 3.5 percent during March-December 2020.</li> <li>• Replacement of SARB's end-of-day discretionary supplementary facilities with Intraday Overnight Supplementary Repurchase Operations, offered at the repo rate and allocated on a pro rata basis.</li> <li>• Standing Facility borrowing rate adjusted to the repo rate less 200 bps; and lending rate lowered to the repo rate.</li> <li>• Additional offerings of longer-term refinancing operations with 91-day maturities at the repo rate plus 30 bps. If deemed necessary, maturities can be extended to 364 days.</li> <li>• SARB lending to commercial banks at the repo rate plus 50 bps to support the government's Loan Guarantee Scheme.</li> <li>• New SARB program to purchase government securities in the secondary bond market, across the yield curve.</li> </ul>	<p>The Prudential Authority introduced:</p> <ul style="list-style-type: none"> <li>• temporary changes to the treatment of restructured loans in good standing before COVID-19 and expected to remain current when the pandemic period ends;</li> <li>• temporary capital and liquidity relief (e.g., reduced Pillar 2A capital requirements, clarified criteria to draw down capital conservation buffers, lowered the liquidity coverage ratio from 100 to 80 percent);</li> <li>• temporary guidance on dividend distribution and cash bonuses (revised in February 2021); and</li> <li>• guidance on the application of IFRS 9 during the pandemic.</li> </ul>
	<b>Support to Vulnerable Borrowers</b>
	<ul style="list-style-type: none"> <li>• Multiple support schemes established, including the COVID-19 Loan Guarantee Scheme, a working capital investment and revolving credit facility backed by the Khula Credit Guarantee, various loan funding facilities and a temporary credit moratorium for MSME.</li> </ul>

**COVID-19 Sovereign Bond Purchases by SARB**

(Billions of rands)

**COVID-19 Loan Restructurings**

(Billions of rands and percent)

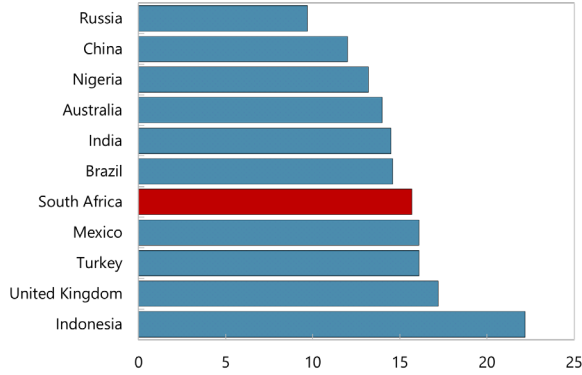


Source: SARB.

**Figure 9. South Africa and Peer Countries: Financial Soundness Indicators**  
(In percent, as of end-2020)

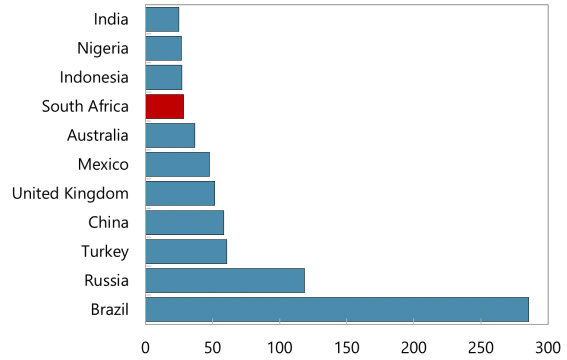
**Tier 1 Capital to Risk-Weighted Assets**

(in percent)



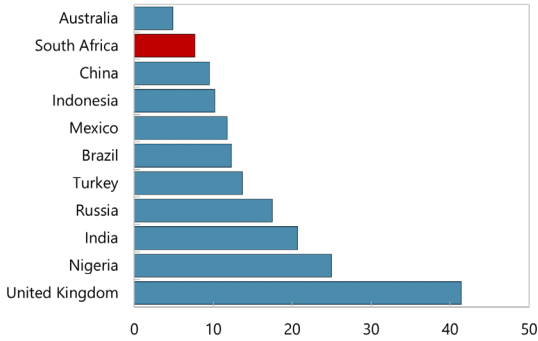
**Liquid Assets to Short-term Liabilities**

(In percent)



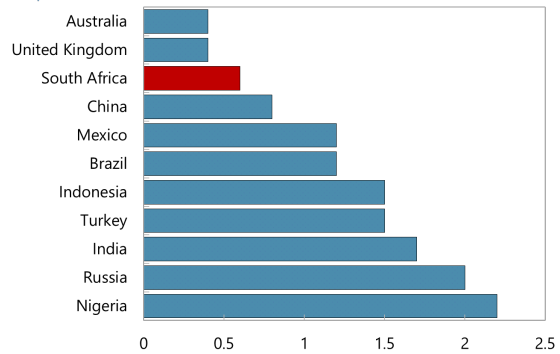
**Return on Equity**

(In percent)



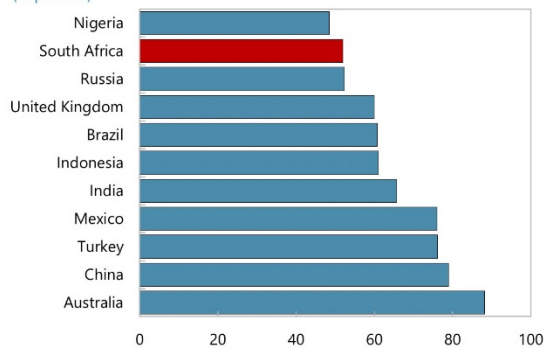
**Return on Assets**

(In percent)



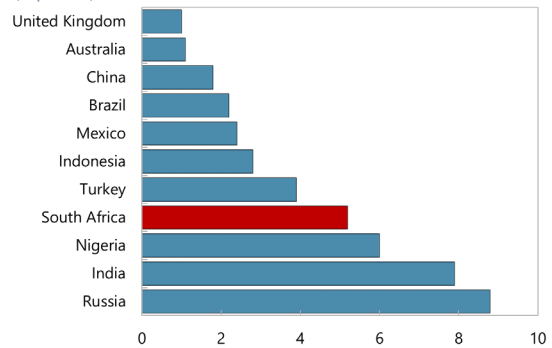
**Interest Margin to Gross Income**

(In percent)



**NPLs to Total Gross Loans**

(In percent)

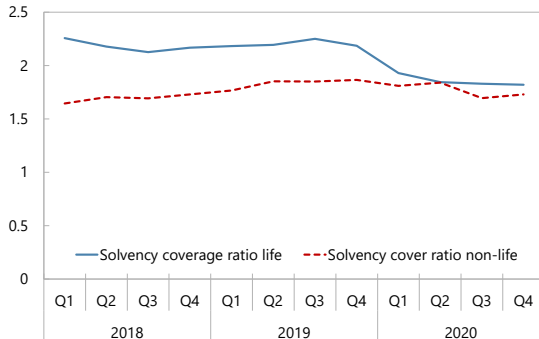


Sources: IMF Financial Soundness Indicators.

**Figure 10. South Africa: Insurance Sector Developments**

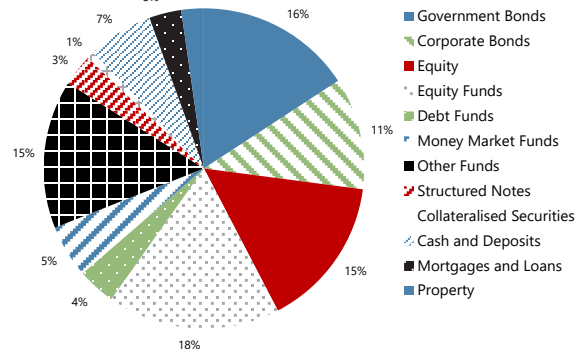
*Solvency ratios remain high and stable*

**Capitalization Requirements**  
(In percent)



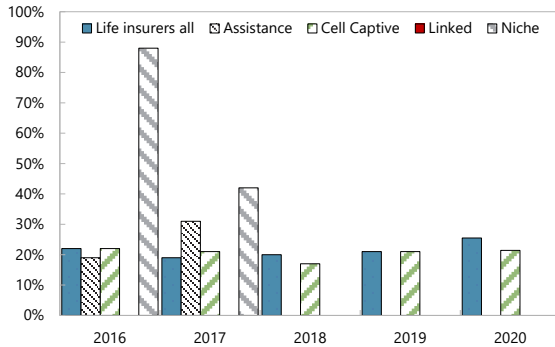
*Substantial exposure to equities poses a risk to life insurers*

**Asset Allocation to Non-linked Products (life)**  
(% of total)



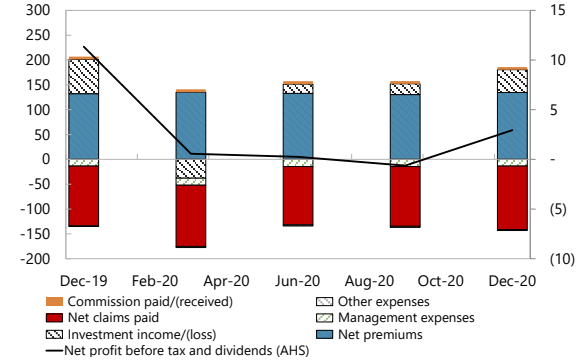
*Life insurers are suffering from high lapse rates*

**Lapse Rates**  
(In percent)



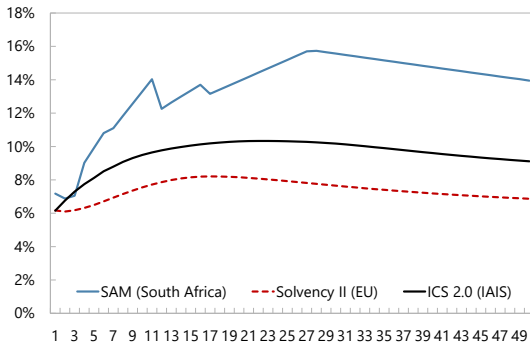
*Investment losses reported in March 2020 were short-lived*

**Life Insurance Profit Drivers**  
(Billions of rands)



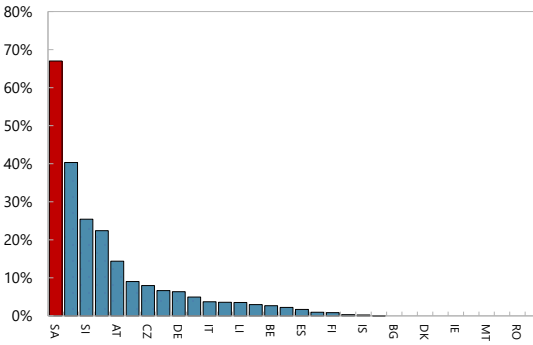
*Risk-free rates are substantially higher than international comparators*

**Risk-Free Rates**  
(In percent)



*Life insurers rely extensively on future profit*

**Future Profits Over Capital Resources**  
(In percent)



Source: SARb and IMF staff calculations.

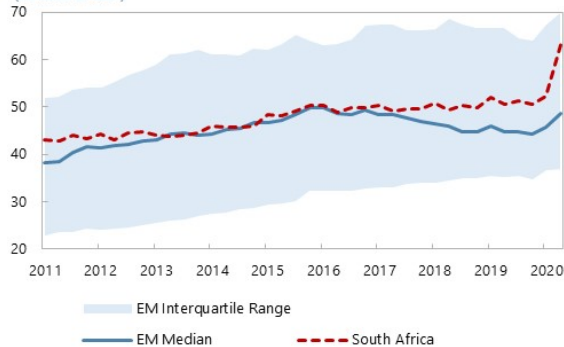


**Figure 11. South Africa: Nonfinancial Corporate Sector**

Corporate sector indebtedness for South Africa is increasingly deviating from international peers...

**Nonfinancial Corporate Debt**

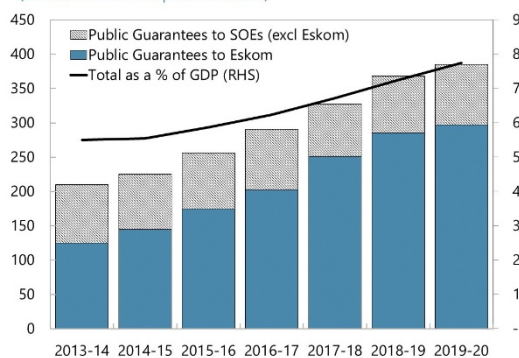
(Percent of GDP)



...posing risks to government finances through extensive guarantees to SOEs.

**Guaranteed SOE Debt**

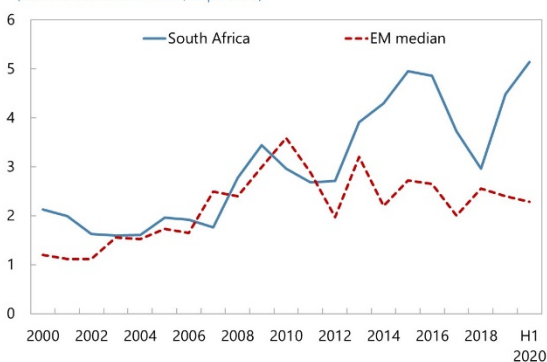
(Billions of rands and percent of GDP)



Improving liquidity has provided an important buffer...

**Corporate Sector Liquidity**

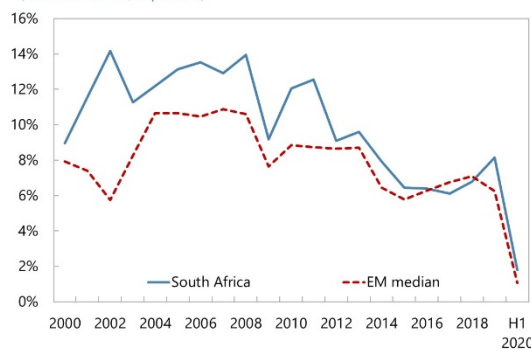
(Cash to short-term debt, in percent)



...but declining profitability, following the COVID-19 poses debt servicing challenges.

**Corporate Sector Profitability**

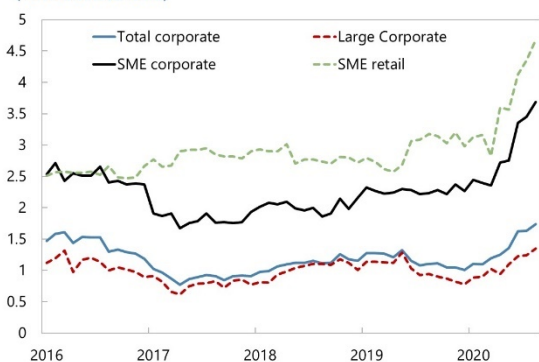
(EBIT over assets, in percent)



NPL ratios continue to increase, in particular for SME...

**Corporate NPLs**

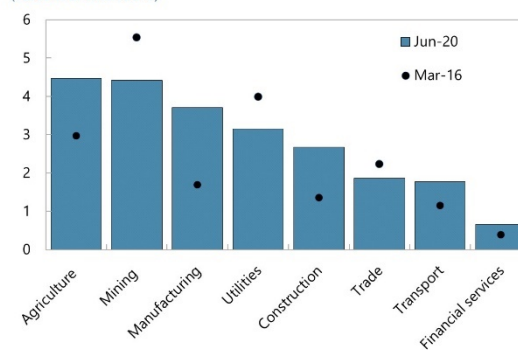
(Percent of total loans)



...with the construction, utilities and transport sector being particularly impacted by the pandemic.

**Corporate NPL by Sector**

(Percent of total loans)

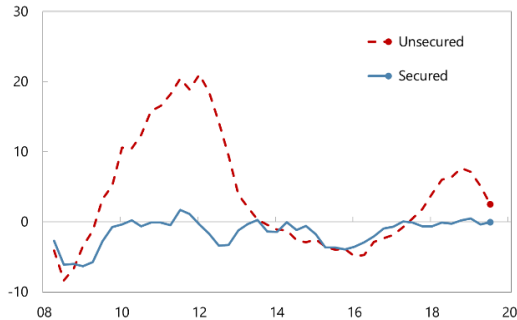


Sources: Bloomberg, Capital IQ, SARB and staff calculations.

**Figure 12. South Africa: Household Sector**

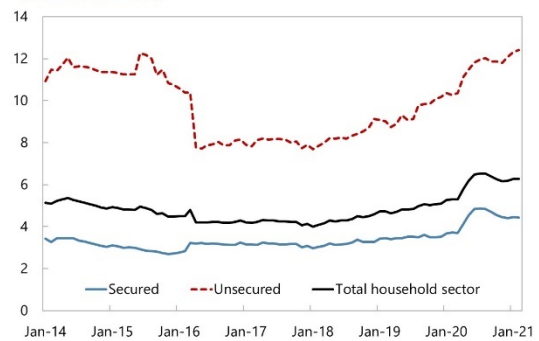
Household credit growth has decelerated amidst the pandemic...

**Real Consumer Credit Growth by Type**  
(Percent, year on year, 2020Q2)



...while NPL ratios have been trending up.

**Household NPLs**  
(Percent of total loans)



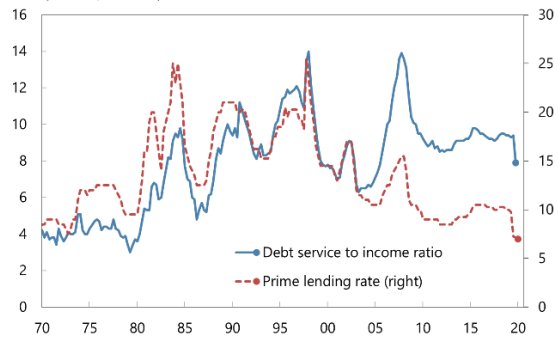
The sharp rise in household debt-to-income, following the COVID-19 outbreak, has largely reversed...

**Household Debt to Income**  
(Percent, 2020 Q2)



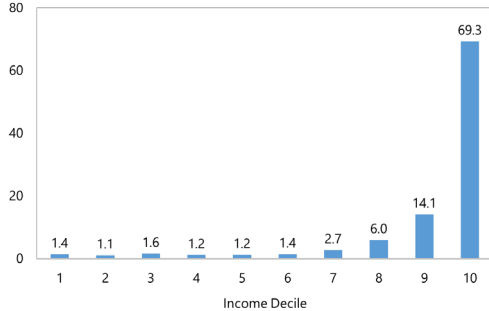
...as large interest rate cuts have helped contain debt burdens.

**Household Debt Service Cost and Interest rates**  
(Percent, 2020 Q2)



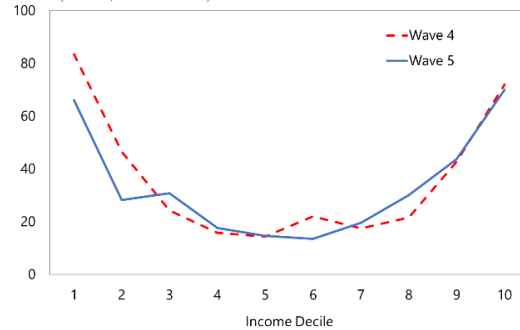
Debt is mostly incurred by higher income households in absolute terms...

**Distribution of Household Debt by Income**  
(Percent of total, Wave 5)



...but lower income households are as indebted relative to income as higher income households.

**Household Debt to Income by Income Decile**  
(Percent, Waves 4 and 5)



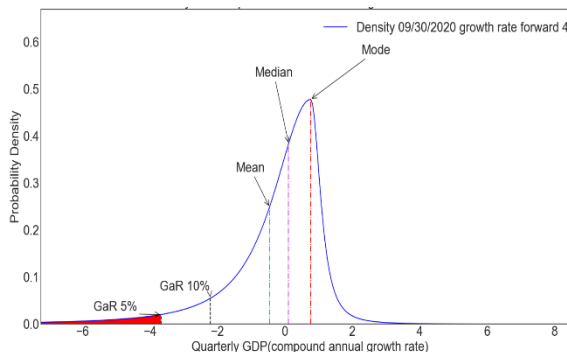
Sources: IMF Financial Soundness Indicators, Haver, National Credit Regulator, South African Reserve Bank, and IMF Staff.

**Figure 13. South Africa: Growth-at-Risk**

Growth-at-Risk estimates suggests severe and very likely downside risks to growth in the near term and at a 2-year horizon....

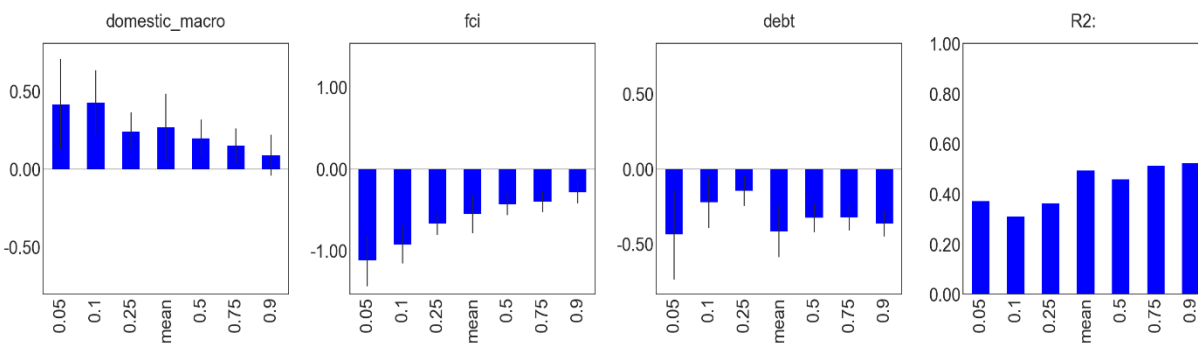
The distribution of growth is very skewed to the left with a 10 percent probability that the economy will contract by at least 2 percent at a 4-quarter horizon....

Compounded annual growth forecasts			
Forward horizon	4	8	12
Input data cut off	9/30/2020	9/30/2020	9/30/2020
Conditional mode	1.0	1.4	1.5
Conditional median	0.2	0.9	0.1
Conditional mean	1.0	1.4	1.5
GaR5%	-3.7	-2.4	-6.5
GaR10%	-2.2	-1.1	-3.9
Growth below 0 probability	0.4	0.2	0.5



The GaR model has desirable statistical properties ....

Quantile regressions coefficients



Source: IMF staff calculations.

**Figure 14. South Africa: Solvency Stress Tests**

Under the April 2021 published WEO projections, with dividend payout ratios at their 2020 value, capital buffers would gradually reach 14.8 percent as provisions decline steadily.

	Dec-20	Dec-21	Dec-22	Dec-23
<b>Tier 1 capital ratio (T1R)</b>	12.6%	13.6%	14.3%	14.8%
<b>Number of banks failing the tests</b>		0	0	0
<b>Recapitalization (% of GDP)</b>		0%	0%	0%
<b>Growth of provisions</b>		-53%	-5%	33%
<b>PD<sup>1</sup></b>		2.3%	1.9%	2.3%

*1/ Weighted by banks' total capital*

Under the adverse scenario, bank capitalization would decline by 2.5-3.4 percentage points by 2023 depending on the magnitude of interest rate risks.

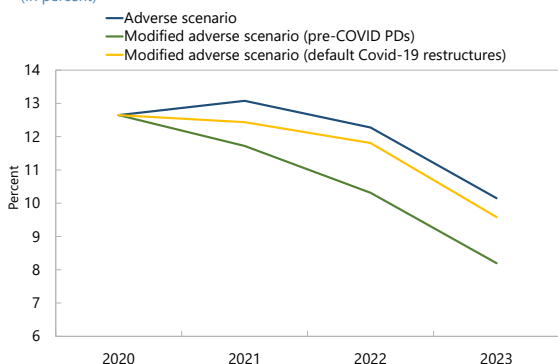
		Dec-20	Dec-21	Dec-22	Dec-23
<b>Tier 1 capital ratio (T1R)</b>	Model A	12.6%	13.1%	12.3%	10.1%
	Model B	12.6%	12.8%	11.7%	9.2%
<b>Number of banks failing the tests</b>	Model A		0	0	1
	Model B		0	1	1
<b>Necessary Recapitalization (% of GDP)</b>	Tier 1 capital				
	Model A		0%	0%	0.6%
	Model B		0%	0.04%	0.8%
<b>Growth of provisions</b>			-47%	-15%	37%
<b>PD<sup>1</sup></b>			3.7%	4.0%	4.4%
<b>LGD<sup>1</sup></b>			26%	26%	26%

*1/ Weighted by banks' total capital*

Counterfactual experiments suggest that pandemic policies protected bank capital, with potential forbearance having a limited (but non-negligible) impact.

**Aggregate Tier One Capital Ratio**

(In percent)

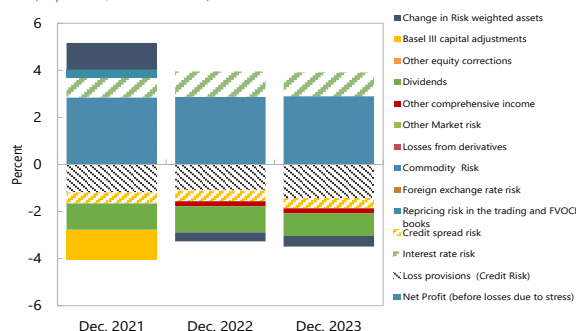


Source: IMF staff calculations.

Capitalization trends are driven by improving net interest income and declining RWA in 2021, with some losses on credit risk spreads and OCI on sovereign exposures

**Contributions to Change in Aggregate Capital Ratios**

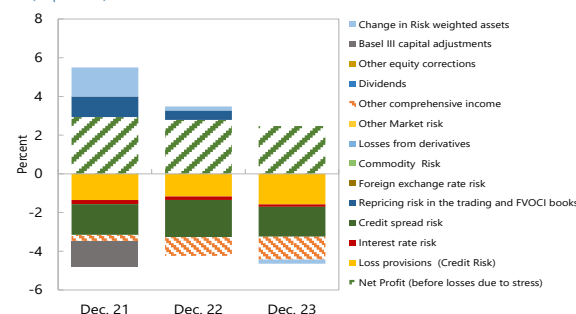
(In percent, WEO baseline)



... reflecting lower NII on accrual loans, compression of lending spreads, continued provision needs and MTM losses on sovereign exposures ....

**Contributions to Change in Capital Ratios (Model A)**

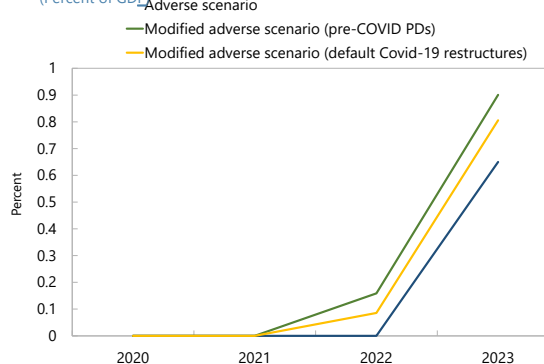
(In percent)



As a result, policies would help contain recapitalization needs in the adverse scenario, while forbearance could cause some additional capital needs

**Recapitalization Needs**

(Percent of GDP)

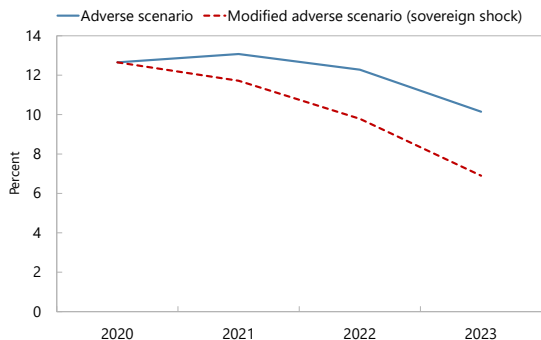


### Figure 15. South Africa: Bank Stress Testing Sensitivity Analysis

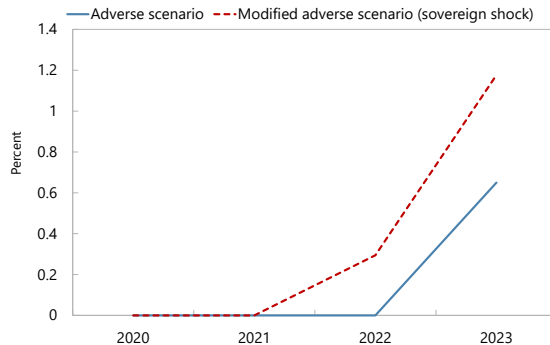
An additional shock of 200 bps to sovereign spreads would further deplete bank capital under the adverse scenario ...

... generating additional recapitalization needs.

**Aggregate Tier One Capital Ratio**  
(In percent)



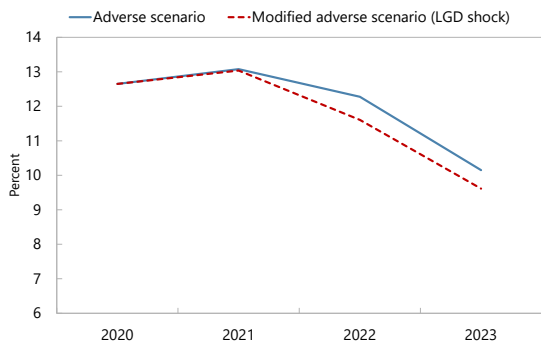
**Recapitalization Needs**  
(Percent of GDP)



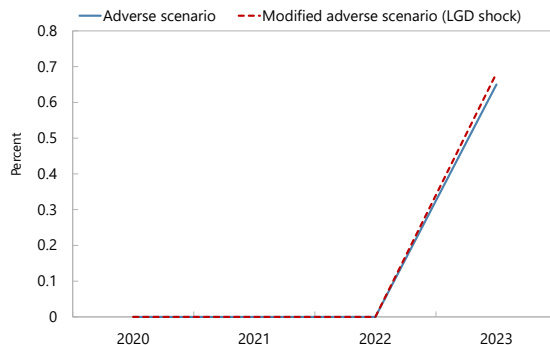
The impact of an additional shock of 5 percentage points to real estate values on capital ratios is estimated to be modest...

... yielding limited recapitalization needs.

**Aggregate Tier One Capital Ratio**  
(In percent)



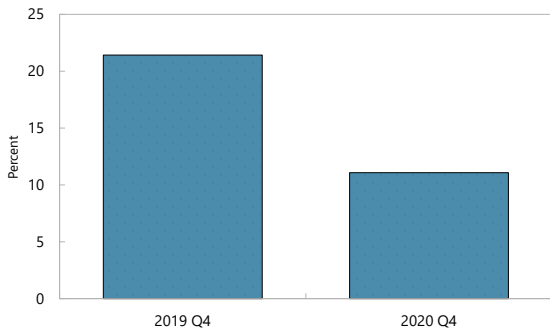
**Recapitalization Needs**  
(Percent of GDP)



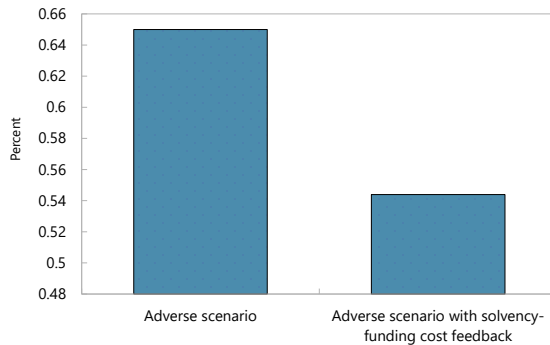
A combined default of the top private sector exposures would cause a loss of 10 percent of bank capital at end 2020...

...while solvency-funding attenuation effects would reduce recapitalization needs under the adverse scenario by around 0.1 percentage points of GDP.

**Combined Default of 5 Largest Exposures for all Banks**  
(Percent of eligible capital)



**Necessary Recapitalization in 2023**  
(Percent of GDP)

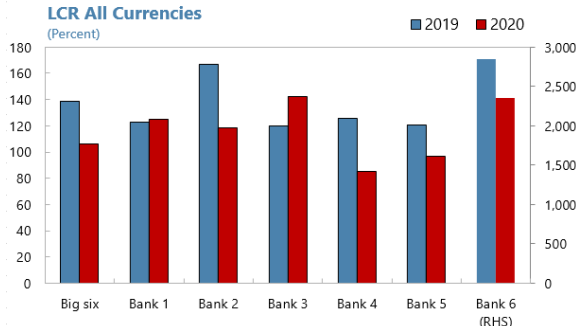


Sources:

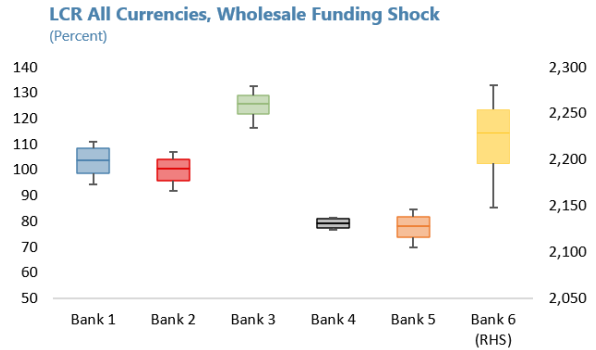
Source: IMF staff calculations.

**Figure 16. South Africa: Bank Liquidity Stress Tests**

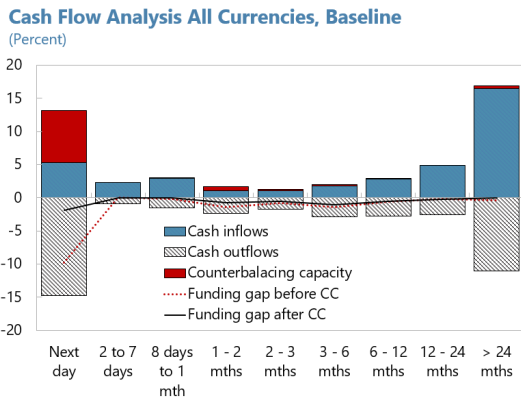
Three of the largest banks saw their LCR ratios decline during the pandemic, with two having made use of the temporary easing of the LCR requirement below 100 percent



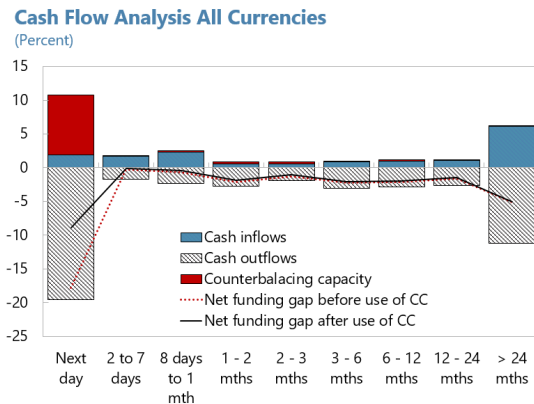
Two banks are vulnerable to wholesale funding shocks that exceed run-off rates envisaged under Basel requirements.



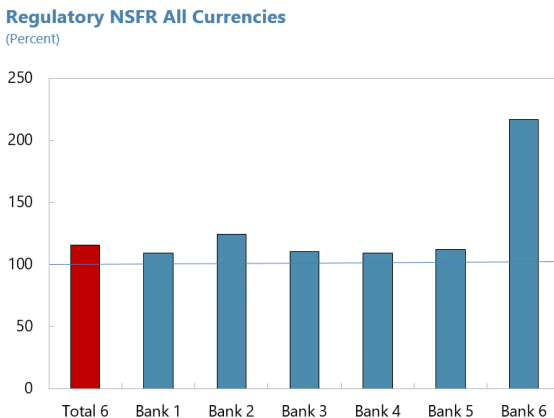
Under baseline assumptions, the cash flow analysis for the six largest banks reveals a small funding gap at the overnight horizon after use of the counterbalancing capacity.



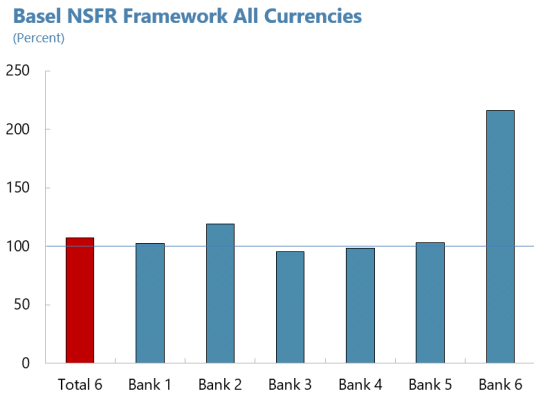
Under more severe stress on outflows, the overnight funding gap becomes large even after use of the counterbalancing capacity and a small funding gap appears at maturities above the one-month horizon.



Under the PA's regulatory parameters, all banks meet the NSFR.



However, under Basel parameters, two banks narrowly miss the 100 percent requirement, pointing to more limited long-term funding buffers.



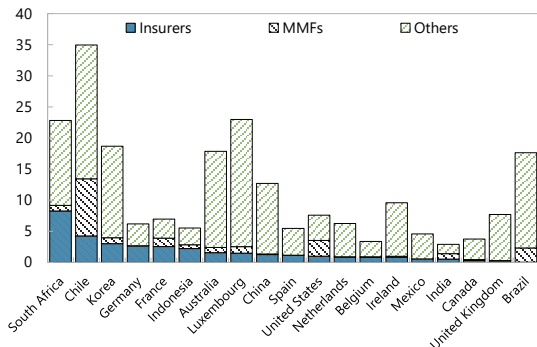
Source: IMF staff calculations.

**Figure 17. South Africa: Domestic Interconnectedness**

The system is highly interconnected, with exposures to insurers being the highest across major EMs and AEs

**Banks' Use of NBF1 Funding**

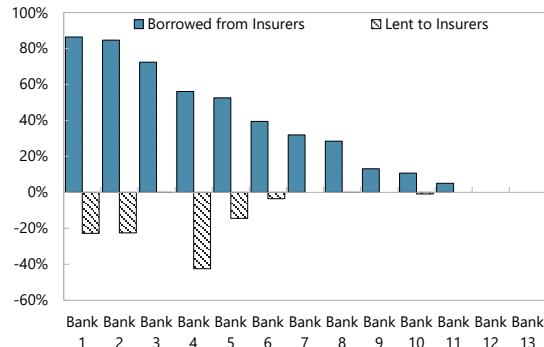
(Percent of domestic bank assets)



Large banks have significantly higher exposures to insurers

**Bilateral Exposures Between Banks and Insurers**

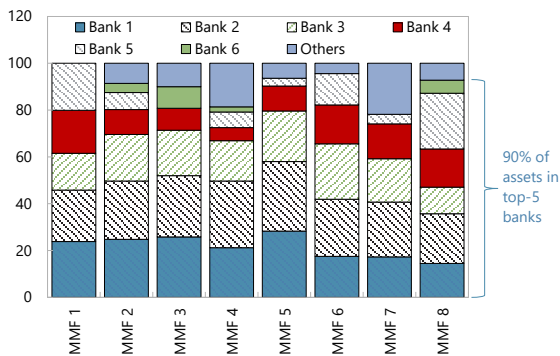
(Percent of bank capital)



MMFs are highly vulnerable to banking sector shocks

**MMF Portfolio Composition**

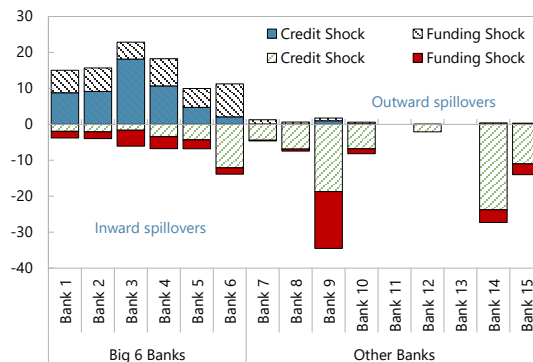
(Percent of total assets under management)



The big banks are a source of outward contagion, while smaller banks are highly vulnerable to such shocks.

**Contagion Spillovers, Banking Sector**

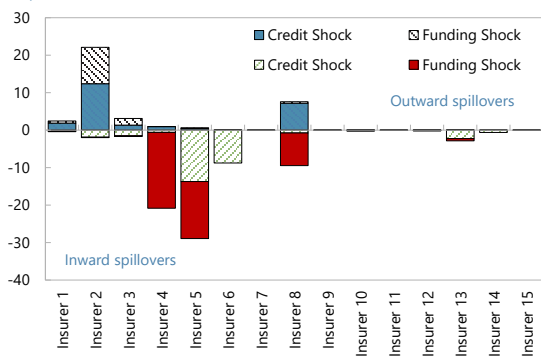
(Spillover index)



A few insurers are distinctly vulnerable to inter-sectoral spillovers.

**Contagion Spillovers, Insurance Sector**

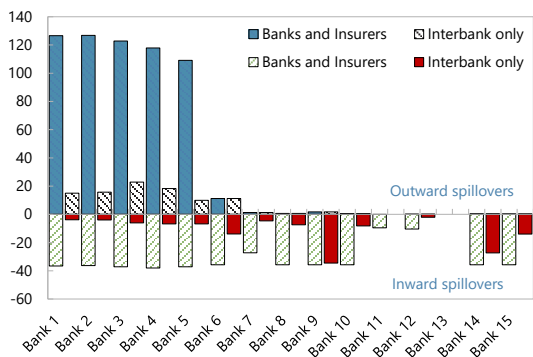
(Spillover index)



Cross-sectoral spillovers can have significant cascading effects, impacting multiple smaller banks.

**Contagion Spillovers, Cross-Sectoral**

(Spillover index)

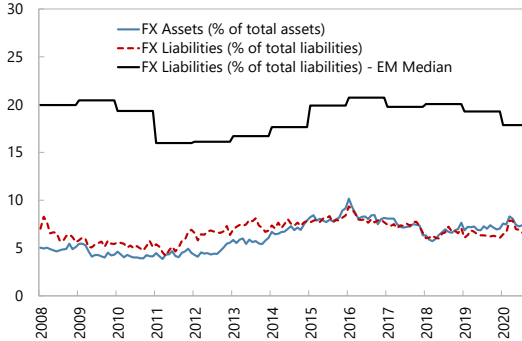


Sources: Company data, SARB, FSB, and IMF staff calculations.

**Figure 18. South Africa: Cross-Border Interconnectedness**

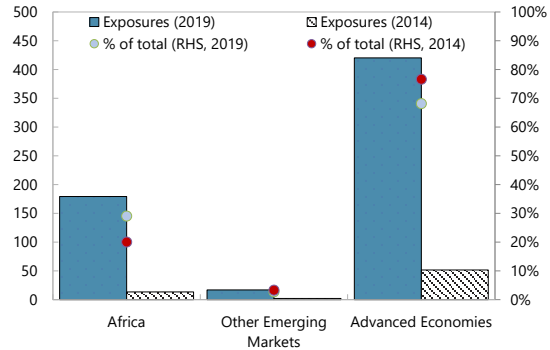
*Banks' FX exposures are smaller than in the other EMs...*

**Foreign Currency Positions**  
(Percent)



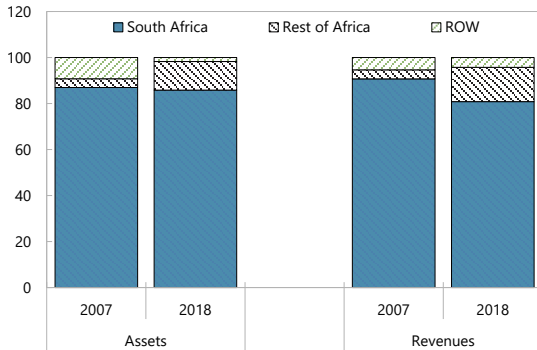
*...but cross-border exposures have risen sharply.*

**Cross-Border Exposures**  
(Billions of rands and percent, as of 2019)



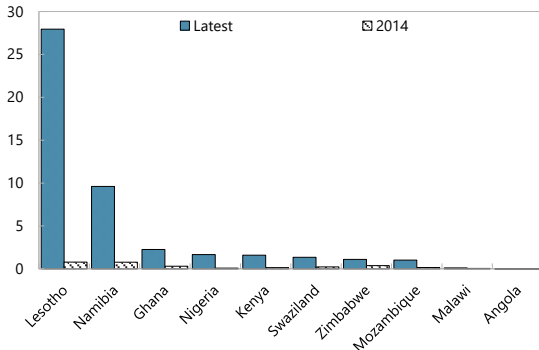
*Banks' footprint in Sub-Saharan Africa is increasing...*

**Composition of Cross-Border Assets and Revenues**  
(Percent)



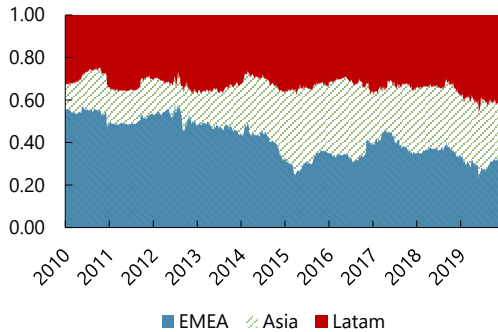
*...with material exposures in some countries*

**Cross-Border Operations**  
(Percent of country GDP)



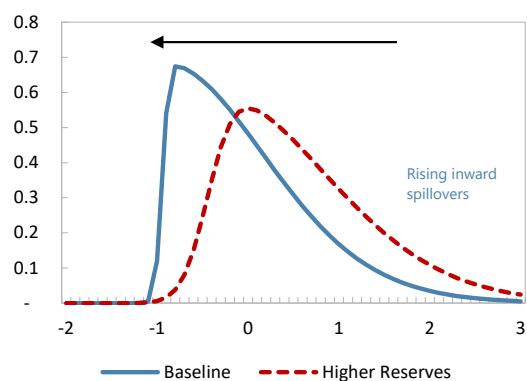
*Market analysis suggests that Latin America accounts for the larger part of inward spillovers*

**Inward Spillovers**  
(Index)



*Inward spillovers can be contained materially by shoring up the buffers*

**Inward Spillovers**  
(Probability density and spillover index)



Sources: BIS, Bloomberg, company data, SARB, IMF Financial Soundness Indicators, and IMF staff calculations.

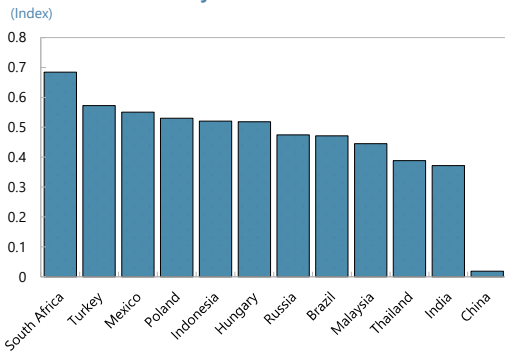
Note: Inward spillovers are calculated using network analysis (Diebold Yilmaz 2009), based on the FX price movements.



**Figure 19. South Africa: Capital Flows**

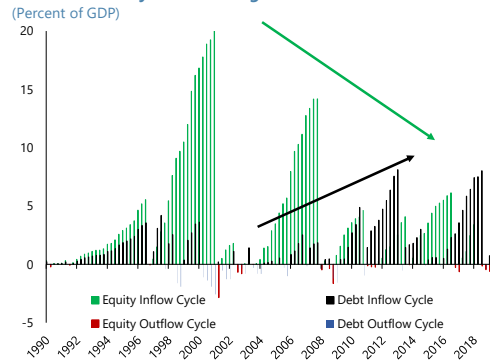
Capital flows are highly correlated to overall EM flows, reflecting the role of external factors

**Correlation of Country Flows to EM Flows**



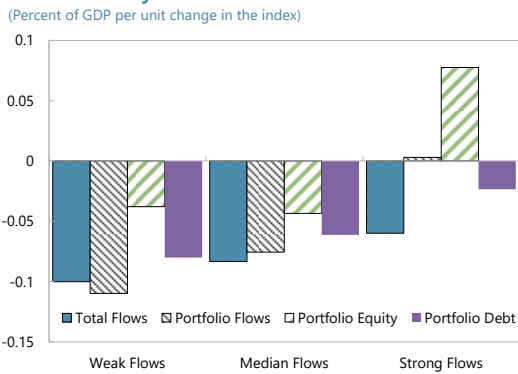
Portfolio flows (percent GDP) have changed significantly in the last two decades, showing distinct reversals and surges

**Portfolio Flow Cycle Across Segments**



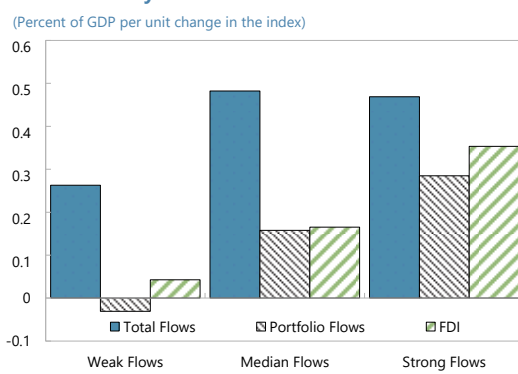
Global risk aversion has a higher impact on likelihood of weak flows, with portfolio flows impacted the most

**Flow Sensitivity to Global Risk Aversion**



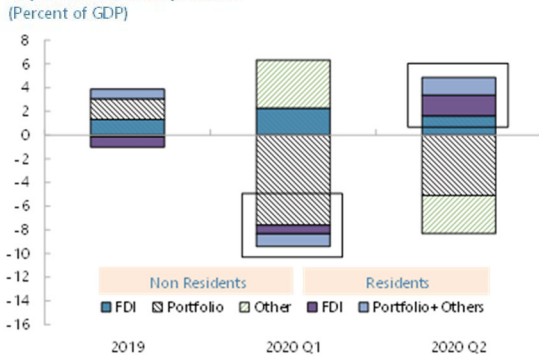
Domestic growth (percent GDP) is positively correlated with strong flows, with for FDI flows benefiting the most

**Flow Sensitivity to Domestic Growth**



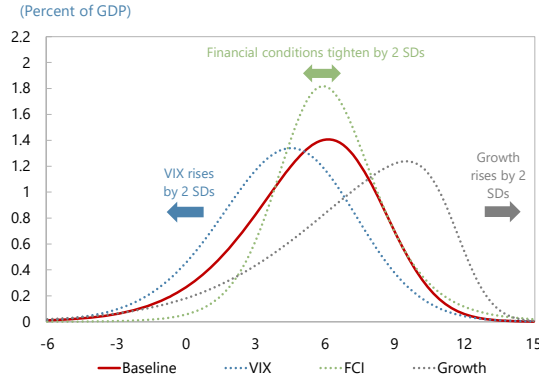
Resident flows acted as a buffer during the COVID sell-off

**Capital Flows Composition**



Domestic growth boosts capital flows, while global risk aversion shocks pose downside risks

**Impact on Flow distribution**

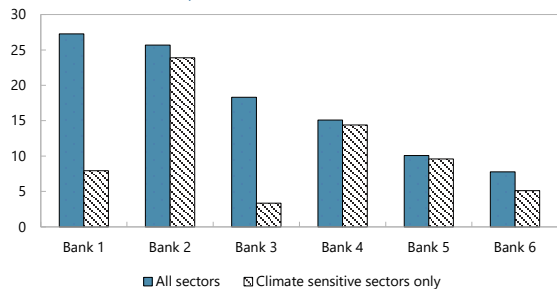


Sources: Bloomberg, IMF WEO, and IMF staff calculations.

**Figure 20. South Africa: Climate Risks**

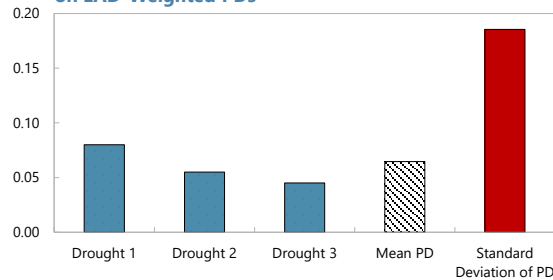
*Exposures to water scarce provinces are notable ...*

**Exposures to Water Scarce Provinces**  
(Percent of Credit Exposures)



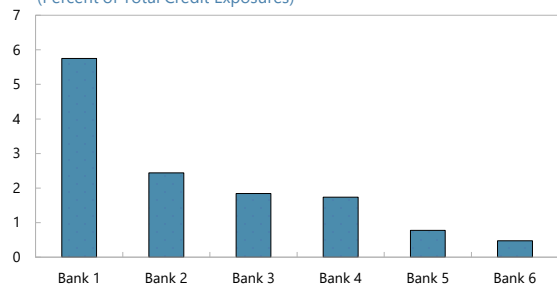
*... and the credit risk impacts of physical risk are, to some extent, already reflected in estimated default probabilities.*

**Estimated Impact of Droughts on EAD-Weighted PDs**



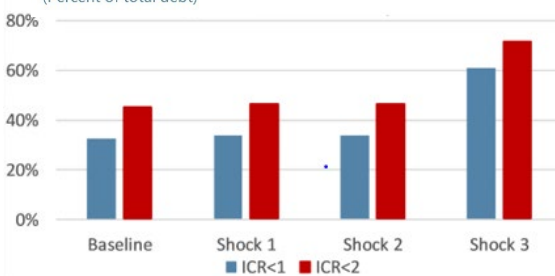
*Exposures to the coal-producing region are relatively small, but there is some heterogeneity.*

**Exposures to Mpumalanga**  
(Percent of Total Credit Exposures)



*A sudden and large rise in the price of carbon could increase the share of corporate debt at risk as margins are compressed*

**Corporate Debt-at-Risk**  
(Percent of total debt)

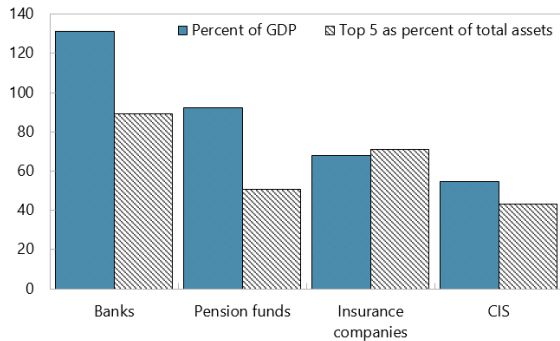


Sources: SARB, South African banks, and IMF staff calculations.

**Figure 21. South Africa: Banking Sector Competition and Efficiency**

High concentration has been a persistent feature of the financial sector.

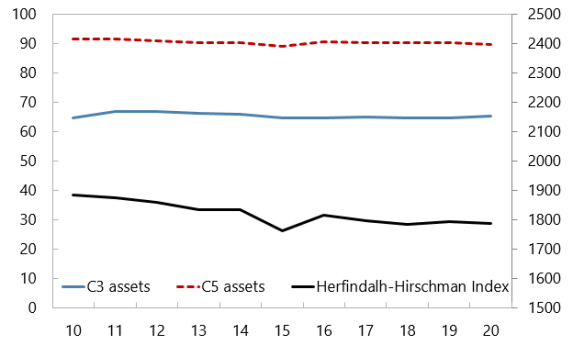
**Financial Sector Concentration**  
(Percent)



Sources: SARB, FSCA, ASISA, Stats SA, and WB staff calculations.

Market shares of assets and deposits by the top banks are above country peers.

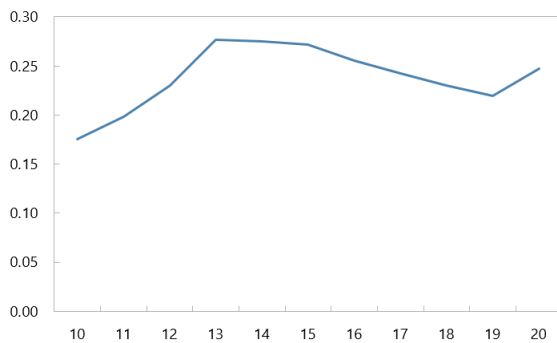
**Market Concentration**  
(Percent)



Sources: SARB and WB staff calculations.

Bank's market power, based on the Lerner index, decreased slightly since 2016.

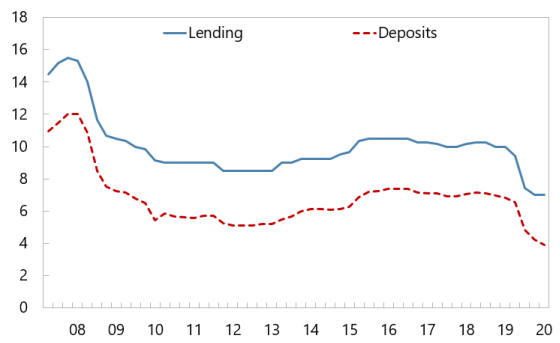
**Lerner Index**  
(Percent)



Sources: Fitch Connect and WB staff calculations.

Interest rates and interest rates spreads have remained stable and are in line with peer countries.

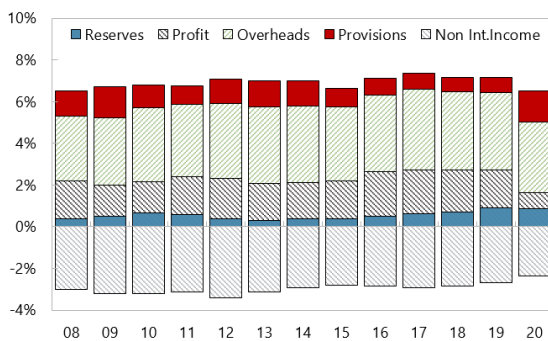
**Interest Rates**  
(Percent)



Source: IMF International Financial Statistics.

Overheads and profit remained high, pointing to persisting operational inefficiencies.

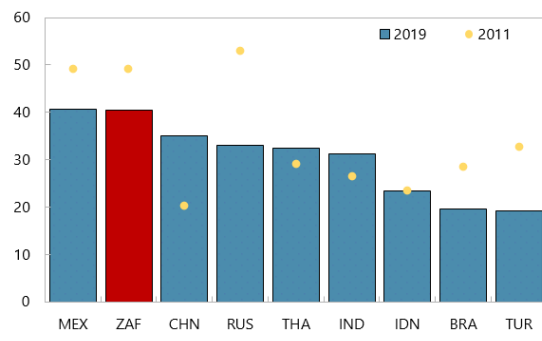
**Interest Rate Spread Decomposition**  
(Percent)



Sources: SARB and WB staff calculations.

Non-interest income and bank fees have remained higher than in peer countries.

**Non-interest Income**  
(Percent of total income)

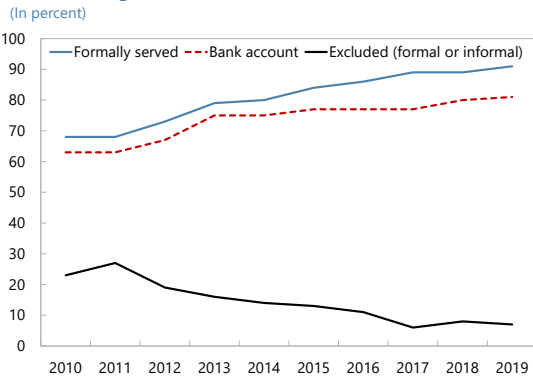


Source: Fitch Connect.

**Figure 22. South Africa: Financial Inclusion and Access to Finance**

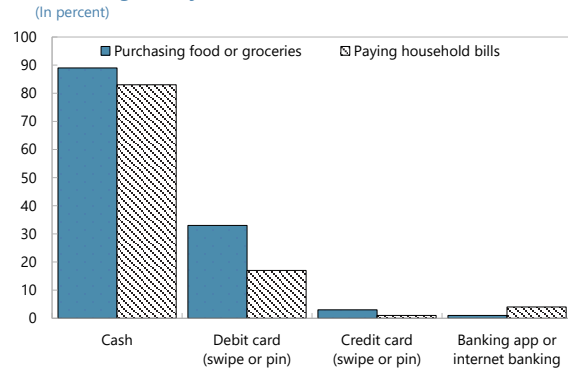
Financial inclusion has increased since 2010 but progress has slowed in recent years

**Adults Using Financial Services**



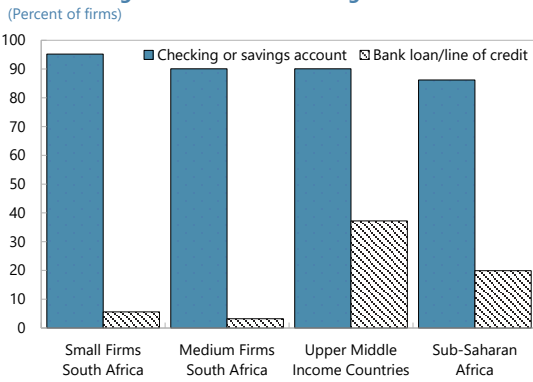
Most South Africans rely on cash for common transactions

**Use of Digital Payments and Cash**



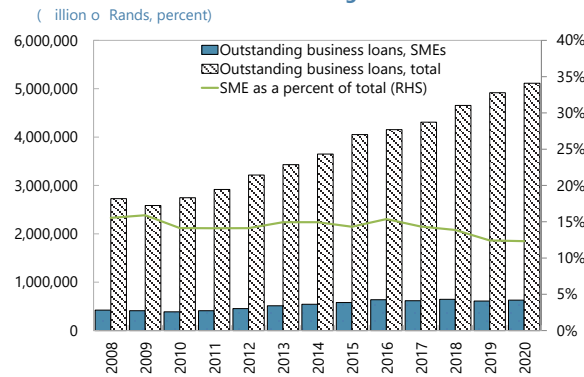
Formal SMEs with credit are far below regional and income benchmarks

**SME Banking Account and Loan Usage**



The share of bank lending to SMEs has declined

**SME Loans and Total Outstanding Business Loans**



Sources: FinScope 2019, SARB, and WB Enterprise Survey 2020.

Table 2. South Africa: Selected Economic Indicators, 2018–23

Social Indicators						
GDP			Poverty (percent of population)			
Nominal GDP (2020, billions of US dollars)	335		Lower national poverty line (2015)			40
GDP per capita (2020, in US dollars)	5,625		Undernourishment (2019)			7
Population characteristics			Inequality (income shares unless otherwise specified)			
Total (2021, million)	60		Highest 10 percent of population (2014)			51
Urban population (2020, percent of total)	67		Lowest 20 percent of population (2014)			2
Life expectancy at birth (2019, number of years)	64		Gini coefficient (2014)			63
Economic Indicators						
	2018	2019	2020	2021	2022	2023
				Est.	Proj.	
<b>National income and prices (annual percentage change unless otherwise indicated)</b>						
Real GDP	1.5	0.1	-6.4	5.0	2.2	1.4
Real GDP per capita	0.0	-1.3	-7.8	4.1	0.6	-0.1
Real domestic demand	1.6	1.1	-8.0	5.7	4.7	1.8
GDP deflator	4.0	4.5	5.3	6.0	2.9	4.7
CPI (annual average)	4.6	4.1	3.3	4.4	4.5	4.5
CPI (end of period)	4.9	3.7	3.2	5.0	4.5	4.5
<b>Labor market (annual percentage change unless otherwise indicated)</b>						
Unemployment rate (percent of labor force, annual average)	27.1	28.7	29.4	33.4	34.3	36.1
Unit labor costs (formal nonagricultural)	4.6	4.5	3.7	4.4	4.5	4.5
<b>Savings and Investment (percent of GDP)</b>						
Gross national saving	13.3	13.3	14.7	16.4	14.1	13.8
Public (incl. public enterprises)	1.3	1.0	-3.5	-2.0	-0.2	0.4
Private	12.0	12.3	18.2	18.4	14.3	13.4
Investment (including inventories)	16.5	16.0	12.7	13.5	15.0	15.2
Public (incl. public enterprises)	4.8	4.3	3.9	3.5	3.6	3.6
Private	11.0	11.1	9.8	9.7	10.1	10.3
<b>Fiscal position (percent of GDP unless otherwise indicated) 1/</b>						
Revenue, including grants 2/	26.4	26.9	25.2	25.1	26.1	26.2
Expenditure and net lending	30.2	31.7	36.0	33.6	33.1	32.5
Overall balance	-3.7	-4.8	-10.8	-8.4	-7.0	-6.4
Primary balance	-0.3	-1.1	-6.6	-4.1	-2.2	-1.2
Structural balance (percent of potential GDP)	-3.5	-3.9	-5.2	-4.8	-5.1	-5.2
Gross government debt 3/	51.6	56.3	69.4	68.8	72.3	74.9
Government bond yield (10-year and over, percent) 4/	9.4	9.0	10.1	9.7	...	...
<b>Money and credit (annual percentage change unless otherwise indicated)</b>						
Broad money	5.6	6.1	9.5	8.5	4.2	4.2
Credit to the private sector	5.5	5.5	1.0	6.2	0.5	1.3
Repo rate (percent, end-period) 4/	6.8	6.5	3.5	3.5	...	...
3-month Treasury bill interest rate (percent) 4/	7.2	7.1	4.5	3.8	...	...
<b>Balance of payments (annual percentage change unless otherwise indicated)</b>						
Current account balance (billions of U.S. dollars)	-13.1	-10.6	6.6	11.9	-3.8	-6.3
percent of GDP	-3.2	-2.7	2.0	2.9	-0.9	-1.4
Exports growth (volume)	2.8	-3.4	-12.0	12.2	1.8	3.1
Imports growth (volume)	3.2	0.5	-17.4	15.1	11.3	4.4
Terms of trade	-2.1	4.2	10.1	7.6	-5.7	0.2
Overall balance (percent of GDP)	0.2	0.5	-1.0	1.1	-0.1	-0.2
Gross reserves (billions of U.S. dollars)	51.6	55.1	55.5	60.0	59.8	58.7
in percent of ARA (w/o CFMs)	72.1	74.3	75.0	80.9	80.6	79.2
in percent of ARA (w/ CFMs)	78.8	81.7	82.4	89.0	88.7	87.1
Total external debt (percent of GDP)	42.6	47.6	56.4	45.1	44.2	43.5
Nominal effective exchange rate (period average) 5/	-0.1	-5.1	-11.3	8.5	...	...
Real effective exchange rate (period average) 5/	1.7	-0.2	-10.2	10.7	...	...
Exchange rate (Rand/U.S. dollar, end-period) 5/	14.4	14.0	14.7	14.6	...	...

Sources: South African Reserve Bank, National Treasury, Haver, Bloomberg, World Bank, and Fund staff estimates and projections.

1/ Consolidated government as defined in the budget unless otherwise indicated.

2/ Revenue excludes "transactions in assets and liabilities" classified as part of revenue in budget documents. This item represents proceeds from the sales of assets, realized valuation gains from holding of foreign currency deposits, and other conceptually similar items, which are not classified as revenue by the IMF's Government Finance Statistics Manual 2014.

3/ Central government.

4/ As of September, 2021.

5/ As of October 19, 2021.

**Table 3. South Africa: Financial Soundness Indicators, 2018–21**

	2018	2019	2020	2021 1/
	(Percent)			
<b>Capital adequacy</b>				
Regulatory capital to risk weighted assets	16.1	16.6	16.6	17.3
<i>of which Tier 1 capital</i>	14.9	15.6	15.7	16.4
Capital to total assets	8.4	8.5	7.9	8.3
<b>Asset quality</b>				
Nonperforming loans to total of loans	3.7	3.9	5.2	5.2
Nonperforming loans net of provisions to capital	17.8	18.1	25.6	23.3
<b>Earnings, profitability, and efficiency</b>				
Return on assets	1.7	1.5	0.6	0.9
Return on equity	19.8	17.6	7.7	11.8
Interest margin to gross income	50.0	52.8	52.0	55.3
Trading income to total income	6.7	5.4	6.1	8.1
Non-interest expenses to gross income	52.8	54.0	61.5	64.7
Personnel expenses to non-interest expenses	51.9	44.2	41.5	49.0
<b>Liquidity</b>				
Liquid assets to total assets	15.6	15.0	15.2	15.8
Liquid assets to short-term liabilities	31.1	30.2	28.6	28.8
Customer deposits to total loans	55.7	57.4	61.0	61.4
<b>Exposure to FX risk</b>				
Net open FX position to capital	0.7	0.9	0.7	0.8
Foreign-currency-denominated loans to total loans	9.4	8.3	8.7	7.5
Foreign-currency-denominated liabilities total liabilities	8.0	7.4	6.4	6.2
<b>Sectoral distribution of loans and advances</b>				
Residents	89.3	90.0	86.8	87.4
Central Bank and other financial corporations	15.7	15.1	15.8	15.2
General government	0.5	0.6	0.5	0.5
Nonfinancial corporations	34.0	34.0	31.5	31.8
Households	39.1	40.2	38.9	40.0
Nonresidents	10.7	10.0	13.2	12.6
<b>Derivatives</b>				
Gross asset position in financial derivatives to capital	41.9	51.2	104.2	74.9
Gross liability position in financial derivatives to capital	42.9	49.3	100.3	70.9
<b>Real Estate Market</b>				
Residential real estate price growth 2/	3.8	3.5	2.5	4.3
Residential real estate loans to total loans	24.0	24.2	23.6	24.5
Commercial real estate loans to total loans	7.5	8.0	8.0	8.1
<b>Household debt 3/</b>				
Household debt to GDP	43.3	43.8	44.3	45.0
Household debt to disposable income	72.7	73.2	75.4	75.3
Household debt service to disposable income	9.3	9.4	7.7	7.7

Sources: Financial Soundness Indicators Database, Haver, and IMF staff calculations.

1/ As of May, 2021.

2/ As of September, 2021.

3/ As of March, 2021.

## Appendix I. Stress Testing Matrix

Domain		Assumptions
<b>Banking Sector: Solvency Risk</b>		
1. Institutional perimeter	Institutions included	6 largest commercial banks.
	Market share	92 percent of the banking system assets.
	Data source and baseline date	<ul style="list-style-type: none"> <li>• Sources: Supervisory data and data directly provided by the banks (regulatory and IFRS9 accounting data);</li> <li>• Baseline date: December 2020;</li> <li>• Scope of Consolidation: Solo data (domestically booked exposures).</li> </ul>
2. Channels of risk propagation	Methodology	Balance sheet-based approach.
	Satellite models for macrofinancial linkages	<ul style="list-style-type: none"> <li>• Logistic bank-sector level NPL panel regression models with macrofinancial determinants; calculations of cure and write-off rates from historical data; PDs consistent with projected NPLs and cure and write-off rates;</li> <li>• Bank level deposit rates and lending rates panel regression models with macrofinancial determinants;</li> <li>• Sovereign spreads (e.g., spread between sovereign bond yields and the repo rate) time series econometric models;</li> <li>• Feedback loops between funding costs and solvency assessed based on a bank level panel regression model;</li> <li>• Evolution of IFRS9 transition matrices based on beta-linked models from Gross, Lalotis, Leika, and Lukyantsau (2020).</li> </ul>
	Stress test horizon	3 years (2021–2023)
3. Tail shocks	Scenario analysis	<ul style="list-style-type: none"> <li>• Adverse scenario with severity benchmarked based on the 5th percentile of a GaR model estimated for South Africa. Macrofinancial simulations realized based on macrofinancial DSGE model by Lipinsky and Miesu, 2020, “Capital Gaps, Risk Dynamics, and the Macroeconomy,” IMF Working Paper WP/20/209, and auxiliary empirical models.</li> </ul>

Domain		Assumptions
		<ul style="list-style-type: none"> <li>The scenario is characterized by an L-shape path for real GDP growth tightening of financial conditions, widening of local currency spreads, and uncertainty about the economic environment.</li> </ul>
	Sensitivity analysis	<ul style="list-style-type: none"> <li>Sensitivity analysis includes two policy counterfactuals that modify credit risk estimates, larger widening of sovereign spreads, higher shocks to the real estate market resulting in higher LGDs and a concentration risk analysis.</li> </ul>
4. Risks and buffers	Risks/factors assessed	<ul style="list-style-type: none"> <li>Credit risk;</li> <li>Interest rate risk in the banking book;</li> <li>Market risk (interest rate, spreads, equity).</li> </ul>
	Behavioral adjustments	<ul style="list-style-type: none"> <li>Dynamic balance sheet with asset growth aligned with nominal GDP growth ensuring stable credit-to-GDP ratio;</li> <li>Cures and write-offs and new credit production endogenously consistent;</li> <li>Portfolio composition unchanged over time.</li> </ul>
5. Regulatory and market- based standards and parameters	Calibration of risk parameters	<ul style="list-style-type: none"> <li>TTC and Initial PiT PDs and LGDs obtained from banks at the asset class level;</li> <li>Dynamic from model estimated PDs in line with the scenario considered (baseline scenario, adverse scenario).</li> </ul>
	Regulatory/ accounting and market-based standards	<ul style="list-style-type: none"> <li>Regulatory capital ratios and IFSR9 accounting standards.</li> </ul>
6. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>Aggregate results and contributions to evolution of capital ratios;</li> <li>Bank by bank results.</li> </ul>



Domain		Assumptions
<b>Banking Sector: Liquidity Risk</b>		
1. Institutional perimeter	Institutions included	6 largest commercial banks.
	Market share	92 percent of the banking system assets.
	Data and baseline date	<ul style="list-style-type: none"> <li>• Source: Supervisory and bank data;</li> <li>• Baseline date: December 2020;</li> <li>• Scope of Consolidation: Solo data.</li> </ul>
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> <li>• Basel III-LCR and NFSR for all currencies and other significant currencies;</li> <li>• LCR and cash-flow test scenario with variants (severe, retail, wholesale funding);</li> <li>• Cash-flow based liquidity stress testing using contractual and behavioral (where available) cash flow data for significant currencies and in USD with assumptions about combined interaction of funding and market liquidity along with two approaches of counterbalancing capacity support and central bank support.</li> </ul>
3. Sensitivity analysis	Perimeter and type of analysis	Retail and funding shock.
4. Risks and buffers	Risks	<ul style="list-style-type: none"> <li>• Funding liquidity shock (short-term liquidity outflows);</li> <li>• Market liquidity shock (asset price shocks and fire-sales).</li> </ul>
	Buffers	<ul style="list-style-type: none"> <li>• Counterbalancing capacity;</li> <li>• Central bank facilities.</li> </ul>
5. Tail shocks	Size of the shock	<ul style="list-style-type: none"> <li>• Simulated run-off rates benchmarked against LCR and NSFR which are based on historical events, statistical approach, satellite models, and IMF expert judgement;</li> <li>• Bank run and dry up of wholesale funding markets, taking into account haircuts to liquid assets;</li> <li>• Assumptions under the Cash flow analysis: all maturing assumptions are rolled over and baseline (business as usual).</li> </ul>

Domain		Assumptions
6. Regulatory and market-based standards and parameters	Regulatory standards	<ul style="list-style-type: none"> <li>• Regulatory: haircuts and run-off rates based on regulatory parameters. For LCR, see BCBS (2013), The Liquidity Coverage ratio and Liquidity Risk Monitoring Tools Basel, January 2013 and NSFR, see BCBS (2014), "Basel III: The Net Stable funding ratio" Basel, October 2014;</li> <li>• Stressed: more severe haircuts under a X scenario and larger run-off rates to reflect more severe episodes of market and funding based on historical events;</li> <li>• For the LCR and NSFR, the hurdle is set to 100 percent;</li> <li>• For the cash-flow analysis, we consider more severe run-off rates and potentially larger haircuts than usually considered in FSAPs, in view of past volatilities of different categories of bank funding.</li> </ul>
7. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>• System wide liquidity gaps;</li> <li>• Survival period by bank, number of banks that can still meet their obligations.</li> </ul>

Domain		Assumptions
<b>Banking and Insurance Sectors: Interconnectedness Analysis</b>		
1. Institutional Perimeter	Institutions included	<ul style="list-style-type: none"> <li>• Interbank network: largest 15 banks ranked according to their consolidated assets;</li> <li>• Inter-insurer network: largest 20 insurers ranked according to their total assets;</li> <li>• Intra-financial sector network: banks and Insurers for the network analysis; major money market funds for the exposure analysis; and</li> <li>• Aggregate financial market data.</li> </ul>
	Data and starting position	<p>Domestic interconnectedness</p> <ul style="list-style-type: none"> <li>• Data source: supervisory data; and</li> <li>• Starting position: two snapshots: 2014 and 2019.</li> <li>• Data granularity: institutional level bilateral exposure data between all entities, including</li> <li>• Within the banking sub-sectors and the insurer sub-sectors; and</li> <li>• Across sectors including between banks, insurers and other nonfinancial sectors.</li> </ul> <p>Cross-border interconnectedness</p> <ul style="list-style-type: none"> <li>• Financial market data for equities, currencies and banking sector equities starting 2010;</li> <li>• Balance sheet information starting 2010 for the regional exposure analysis; and</li> <li>• Cross-border data at an institutional level, based on the supervisory data.</li> </ul>

Domain		Assumptions
2. Methodology	Overall framework	<p>Interbank: balance sheet-based interbank model based on an extension of Espinosa-Vega and Solé (2010):</p> <ul style="list-style-type: none"> <li>extension: multiple failure thresholds are taken into consideration rather than assuming total capital loss as the only source of shock. Failure thresholds are also institution-specific, taking into account regulatory requirements and applicable buffers.</li> </ul> <p>Market price-based spillover model by Diebold and Yilmaz (2014); and quantile regression framework for the fundamental analysis:</p> <ul style="list-style-type: none"> <li>extension: analysis is also conducted to measure the role of domestic fundamentals in driving and limiting these cross-border spillovers.</li> </ul>
3. Risks and buffers	Risks	<ul style="list-style-type: none"> <li>Credit and funding losses related to interbank exposures and intra-financial exposures; and</li> <li>Global risk aversion and Domestic Fundamental shocks.</li> </ul>
	Buffers	<p>Domestic interconnectedness: Institution's own capital and liquidity buffers.</p> <ul style="list-style-type: none"> <li>Banks: three thresholds are considered, ranging from the minimum CET1 ratio at 4.5 percent to the CET1 requirement plus all applicable buffers;</li> <li>Insurers: two thresholds are considered including Minimum Capital Ratio and Solvency Capital Ratio.</li> </ul>
4. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>Inter-financial network: a network chart based on the exposures</li> <li>Index of vulnerabilities and contagion—for each sector (showing institutional level data);</li> <li>Distribution of the spillover indices based on institution size, institutional sector, and other characteristics;</li> <li>Evolution and direction of spillovers.</li> </ul>

Domain		Assumptions
<b>Corporate Stress Test</b>		
1. Institutional perimeter	Institutions included	158 publicly listed firms and Eskom.
	Market share	78 percent of corporate debt as of end 2018.
	Data and baseline date	<ul style="list-style-type: none"> <li>• Sources: Datastream and Capital IQ; Moody's KMV;</li> <li>• Baseline date: December 2019;</li> <li>• Scope of Consolidation: consolidated balance sheets.</li> </ul>
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> <li>• Projections of balance sheets;</li> <li>• Variables projected: ICR, cash balance, total debt, ROA.</li> </ul>
	Model	<ul style="list-style-type: none"> <li>• Regression models for some of the key variables (e.g., ROA) combined with accounting identities and macro projections to generate consistent projections of balance sheet and financial statements;</li> <li>• Aggregation at the country level (proportion of firm at risk, and proportion of debt among firms that are at risk).</li> </ul>
	Stress Test Horizon	<ul style="list-style-type: none"> <li>• 2020–2022</li> <li>• Projection for 2020 interpreted as a counterfactual (no policy support).</li> </ul>
3. Tail shocks	Size of the shock	<ul style="list-style-type: none"> <li>• Adverse scenario with severity benchmarked based on the 5th percentile of a GaR model estimated for South Africa. Macrofinancial simulations realized based on macrofinancial DSGE model by Lipinsky and Miesu, 2020, "Capital Gaps, Risk Dynamics, and the Macroeconomy", IMF Working Paper WP/20/209, and auxiliary empirical models;</li> <li>• The scenario is characterized by an L-shape path for real GDP growth tightening of financial conditions, widening of local currency spreads, and uncertainty about the economic environment.</li> </ul>
4. Risks and buffers	Risks	<ul style="list-style-type: none"> <li>• Liquidity risks</li> <li>• Credit risks</li> </ul>
	Buffers	<ul style="list-style-type: none"> <li>• Initial cash balance</li> <li>• Initial equity</li> </ul>

Domain		Assumptions
5. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>Share of firms (or share of debt among firms) with ICR &lt; 1 or with borrowing needs;</li> <li>Aggregate one year ahead expected default frequency and one year ahead expected defaults on loans by large corporates in percent of banks' Tier one capital.</li> </ul>
<b>Climate Risk Stress Tests</b>		
1. Institutional perimeter	Institutions included	158 publicly listed firms and Eskom 6 largest commercial banks.
	Market share	78 percent of corporate debt as of end 2018 92 percent of banking system assets
	Data and baseline date	Corporates: <ul style="list-style-type: none"> <li>Sources: Datastream and Capital IQ; Moody's KMV.</li> <li>Baseline date: December 2019.</li> <li>Scope of Consolidation: consolidated balance sheets</li> </ul> Banks: <ul style="list-style-type: none"> <li>Source: Supervisory and bank data.</li> <li>Baseline date: December 2020.</li> <li>Scope of Consolidation: Solo data.</li> </ul>
2. Channels of risk propagation	Methodology	Sensitivity analysis shocks
	Model	Corporates: <ul style="list-style-type: none"> <li>Sensitivity analysis 1: shock to production costs derived from an increase in carbon taxes that reduced ROA, resulting in an increase in debt-at-risk (share of debt of firms with ICR &lt; 1);</li> <li>Sensitivity analysis 2: regression analysis linking sectoral EDFs to electricity prices.</li> </ul> Banks: <ul style="list-style-type: none"> <li>Difference-in-difference panel regressions at the bank-sector-province level;</li> <li>Bank exposures.</li> </ul>
	Risks	<ul style="list-style-type: none"> <li>Liquidity risks</li> <li>Credit risks</li> </ul>

Domain		Assumptions
3. Sensitivity analysis	Perimeter and type of analysis	<ul style="list-style-type: none"> <li>• Credit risk shock</li> <li>• Liquidity shock</li> </ul>
4. Tail shocks	Size of the shock	<ul style="list-style-type: none"> <li>• Statistical analysis (multiple of standard deviation);</li> <li>• Carbon price shock to mid-point estimate of carbon price consistent with temperature increase aligned with Paris agreement.</li> </ul>
5. Risks and buffers	Risks	<ul style="list-style-type: none"> <li>• Liquidity risks</li> <li>• Credit risks</li> </ul>
	Buffer	<ul style="list-style-type: none"> <li>• Corporate profit margins and equity</li> <li>• Bank capital stock</li> </ul>
6. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>• Aggregate debt-at-risk (based on ICR &lt; 1)</li> <li>• EAD-weighted aggregated Probabilities of Default</li> </ul>

## Appendix II. Risk Assessment Matrix

Source of Risks	Transmission Channels	Likelihood	Impact
<i>Global Risks</i>			
<b>Resurgence of the COVID-19 pandemic</b>	Further outbreaks of the virus lead to a resurgence of the pandemic (possibly due to vaccine-resistant variants), requiring costly containment efforts and triggering behavioral changes that may render certain economic activities unviable. The resulting disruption in economic activity and increased unemployment poses risks to asset quality and bank profitability and can weigh on capital flows.	<b>High</b>	<b>High/ Medium</b>
<b>Rising yields and risk premia due to a de-anchoring of inflation expectations</b>	A fast recovery in demand (supported by stimulus policies and/or excess savings), combined with COVID-19 related supply constraints, leads to sustained above-target inflation readings and a de-anchoring of inflation expectations. Repositioning by market participants, in response to signaling by the Federal Reserve and other monetary policy about potential rate hikes leads to a front-loaded tightening of financial conditions and higher risk premia, including for credit, equity and emerging market currencies. Resulting increases in funding costs could impose additional stresses on sovereigns, banks, households and leveraged firms; while falling asset prices and/or valuation losses on sovereign holdings could erode financial institutions' capital buffers.	<b>Medium</b>	<b>High/ Medium</b>
<b>Cyber attacks</b>	Cyber-attacks on critical infrastructure and financial systems trigger systemic financial instability or widespread disruptions in socio-economic activities and remote work arrangements.	<b>Medium</b>	<b>High</b>
<i>Domestic Risks</i>			
<b>Intensification of the sovereign-financial institutions nexus</b>	Against a backdrop of weakening public finances and rising debt levels, the increase in sovereign exposures (found across emerging markets in the COVID-19 crisis) exposes domestic financial institutions to valuation losses and funding cost increases (as credit ratings are pegged to those of the sovereign), while the safety net value of the fiscal backstop would weaken. A substantial decline in the supply of private sector credit, if large-scale financial repression were to materialize, could weigh on the recovery following the COVID-19 crisis.	<b>Medium</b>	<b>High/ Medium</b>
<b>Protracted domestic uncertainty amidst reduced policy space and worsening confidence</b>	Delays in fiscal consolidation, restructuring of insolvent SOE and spending geared to mitigate the crisis impact further erode public finances, cause a sharp rise in (already high) poverty and inequality and increase credit risks. Extensive domestic interconnectedness generates cascading effects through the consolidation of losses incurred by material subsidiaries, wholesale funding shocks and/or a broader erosion of confidence.	<b>High</b>	<b>High</b>
<b>Higher frequency and severity of natural disasters related to climate change and transition risks due to highly CO2 intensive economy</b>	South Africa is vulnerable to both physical and long-term transition risks, due to its geographic location and highly CO2 intensive economy. Increased damage from storms, floods and droughts can weigh on the economy and adversely impact the financial sector through credit risk, a decline in profitability, and valuation losses. Transition risks can reduce corporate profits, with potential credit risk implications for the banking system. Increasing sovereign-financial sector linkages imply that any material erosion of public finances due to climate risks could also generate adverse feedback loops for the financial system.	<b>Medium</b>	<b>Medium</b>



## Appendix III. Corporate Sector Stress Test

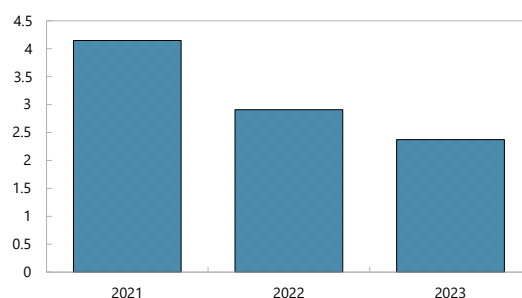
**1. A multi-year *dynamic scenario-based stress test* simulates the evolution of publicly listed firm’s financial indicators, including their profitability, leverage, liquidity/borrowing needs, and their ability to service their debt.** The framework combines firm level OLS panel regressions that relate firm level indicators to past firm level structural and cyclical characteristics, industry fixed effects, and macrofinancial conditions and accounting identities to ensure consistency among all firm level indicators projected under a specific macroeconomic scenario. An industry differentiation of shocks is also introduced, by making use of financial analysts’ calendar year forecasts of earnings and sales of publicly listed firms, while ensuring country level consistency with the macroeconomic scenarios selected for the projections.<sup>1</sup> The last observed data point is end of 2019.

**2. The simulations of firm level indicators are performed for the April 2021 WEO baseline projections and for the FSAP adverse scenario.** The two main vulnerability indicators of interest are (i) the ICR, defined as the ratio of earnings before interest and taxes (EBIT) to interest expenses; and (ii) the cash balance (before accounting for any increase in debt) defined as EBIT minus taxes and interest expense plus initial cash. The analysis assumed that firms do not pay dividends, that capital expenditures cover depreciation and amortization and that the net capital stock does not increase.

**3. Financial stability implications are assessed by mapping firm level indicators (leverage and the ICR) into firm level probabilities of default using a matrix based on US data from Moody’s.** The resulting default probabilities are then aggregated using each firm’s debt as a weight. Finally, the 2019 starting point of the aggregated default probability is benchmarked with the end of 2019 *one-year ahead* expected default frequencies for South African corporates from Moody’s KMV. We consider two benchmarks, the first one to the average expected default frequency (EDF), and the second to the median EDF for South African corporates.<sup>2</sup>

**4. We find that, under the baseline, the share of firms with an ICR < 1 would gradually decline to 17 percent, but their share of debt remains higher at around 30–35 percent.** Under the adverse stress test scenario, 27–38 percent of firms would have an ICR < 1, accounting for 58 percent of the stock of debt in 2021 and 44 percent in 2022. The mapping into expected default frequencies suggests that, under the adverse scenario, the inflow of NPLs would amount to 4 percent of Tier one capital in 2021, 2.9 percent and 2.4 percent respectively in 2022 and 2023.<sup>3</sup>

**Aggregated Expected Default of Large Corporates**  
(In percent of Tier one capital for the top 5 banks, adverse scenario)



Note: chart shows the expected inflows of (EAD) defaulted exposures for the sub-asset class “Corporates”, in percent of Tier one capital for IRB portfolios, aggregated across

<sup>1</sup> For a detailed description of the framework, please see Tressel Thierry and Xiaodan Ding, 2021, “Global Corporate Stress Test: COVID-19 Impact and Medium-Term Implications”, forthcoming IMF Working Paper.

<sup>2</sup> The mean EDF is impacted by large outliers such as Eskom, while the median is much less sensitive to outliers.

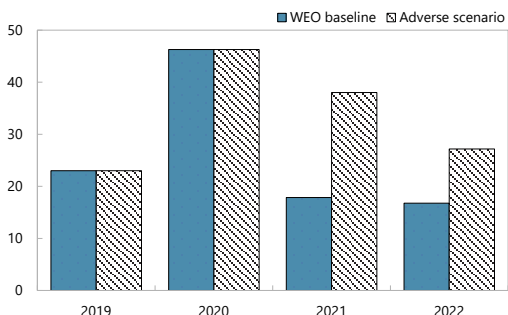
<sup>3</sup> This estimate is based on the benchmarking to the median Moody’s KMV.

### Appendix III. Figure 1. South Africa: Corporate Stress Test

The share of firms at risk would decline markedly in the baseline, but remain elevated in the adverse scenario.

#### Share of Firms with ICR<1

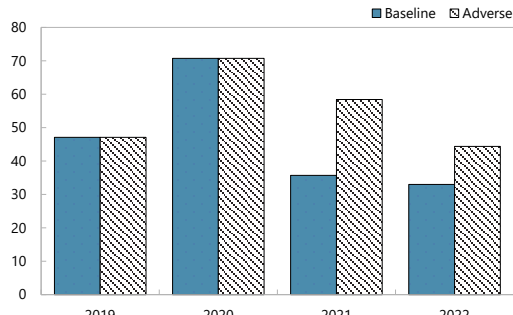
Spring 2021 WEO and solvency stress test adverse scenario (in percent)



The share of debt is generally higher, due to the presence of large vulnerable firms

#### Share of Debt of Firms with ICR<1

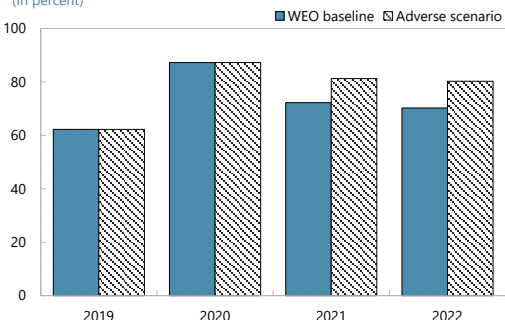
Spring 2021 WEO and solvency stress test adverse scenario (in percent)



Borrowing needs remain high under both scenarios...

#### Share of Firms with Borrowing Needs

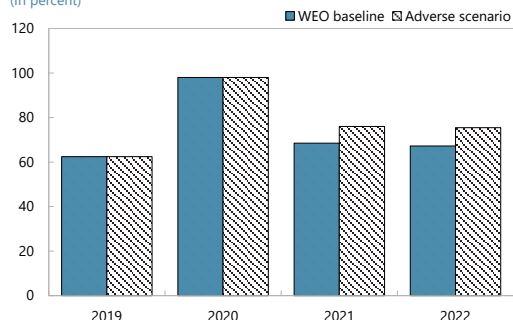
Spring 2021 WEO and solvency stress test adverse scenario (in percent)



...with the debt of the affected firms accounting for a large share of the total stock of debt

#### Share of Debt of Firms with Borrowing needs

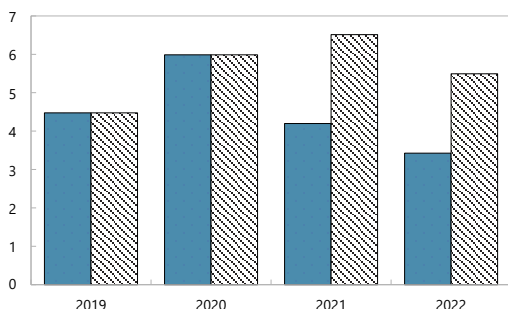
Spring 2021 WEO and solvency stress test adverse scenario (in percent)



The aggregate expected default risk declines steadily under the baseline but remains high under the adverse scenario.

#### Simulated One Year Ahead Mean Expected Default Frequencies

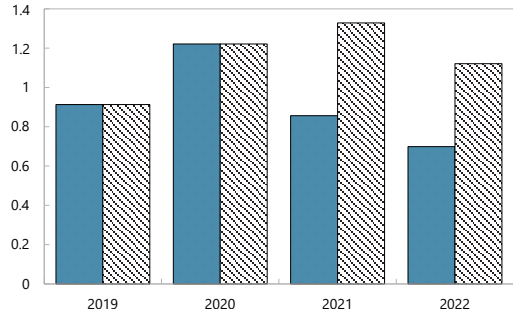
(In percent)



The projected default risk remains significant under the adverse scenario when benchmarked with the median 2019 expected default frequency.

#### Simulated One Year Ahead Median Expected Default Frequencies

(In percent)

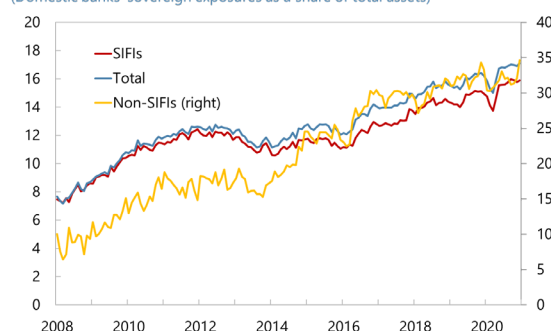


Sources: SARB and IMF staff calculations.

## Appendix IV. Managing the Sovereign-Financial Sector Nexus

**1. Increasing sovereign exposures of financial institutions create potential adverse feedback loops raising risks and distortions in the form of crowding out private credit.** Risks stemming from the nexus are reflected in the FSAP's solvency stress test, which points to potentially large losses from sovereign exposures in the adverse scenario. SARB has also flagged this as a key systemic risk, notwithstanding the relatively favorable currency and maturity structure of the debt profile.

**South Africa: Sovereign-Bank Nexus**  
(Domestic banks' sovereign exposures as a share of total assets)



**2. While a structural de-risking is contingent on fiscal reforms, prudential measures can help boost resilience by increasing buffers and provide disincentives against excessive risk concentrations, while avoiding unintended side-effects (e.g., excessive reduction of liquidity, bond market pressures, or other unwarranted macrofinancial dynamics).** Various measures can be considered, with careful calibration, phasing-in arrangements and clearly communication to help achieve their objectives.<sup>1</sup>

- Given distortions associated with the preferential treatment of sovereign exposures—in line with the national discretion embedded in the Basel framework—increasing RWA arises as a natural response. Importantly, IRB banks have already increased RWA on their sovereign holdings and thereby hold more capital against them. Similarly, the authorities could introduce positive RWA for banks that apply the standardized approach. However, the potential for procyclical dynamics would need to be considered (see, e.g., [Véron, 2017](#)).
- Another option would be to apply Pillar 1 or 2 capital surcharges, designed to disincentivize excessive concentrations while limiting unintended side-effects. For instance, by applying positive surcharges only above a certain thresholds (to account for holdings of sovereign bonds to meet liquidity requirements), with gradual increases as exposures as a share of assets rise (see [2018 Romania FSSA and 2020 Italy FSSA](#)).
- A third option is to use a quantitative measure instead of a price-based one, in the form of concentration limits. Such measures would reduce concentration, but cliff effects may materialize when institutions approach the limits and may need to resort to fire sales.

**3. Introduction of prudential measures to address the sovereign-financial nexus would be optimal before there is a significant build-up of this risk in bank balance sheets;** but measures can best be phased-in after the normalization of pandemic-related relaxation of capital requirements has been completed. A reasonable transition period will be needed to allow financial institutions time to adjust their balance sheets; but a near-term announcement of envisaged measures, with the applicable transition period, can help condition behavior and thus smooth the adjustment process.

<sup>1</sup> For a general discussion of the sovereign nexus, see [BCBS' Discussion paper on the regulatory treatment of sovereign exposures](#) and IMF Departmental Paper on [Managing the Sovereign Bank Nexus](#).

## Appendix V. Twin Peaks Implementation

- 1. The implementation of Twin Peaks model represents a significant change to South Africa's financial supervisory architecture.** The reform was motivated by a need to increase robustness of the regulatory and supervisory system, reinforce financial stability, improve consumer protection, and enhance regulatory cooperation.
- 2. The Financial Sector Regulation Act (2017) set stronger safeguards on operational independence of the PA and FSCA,** but some scope for improvement remains (better anchoring of the PA's operational independence and accountability in legislation, further limiting the Minister of Finance's involvement in prudential decisions, mandatory disclosure of the reasons for the dismissal of the PA's CEO, strengthening the FSCA's functional autonomy, such as decision-making processes).
- 3. The operationalization of the new supervisory architecture has progressed well,** with significant progress on integrating prudential supervision of bank and insurance companies; and preparing a regulatory framework for financial conglomerates. However, additional resources are needed to support the FSCA's market conduct responsibilities and deepen activities in specialized areas (e.g., risk analysis and modelling, IT, cybersecurity, and governance).
- 4. Cooperation between financial sector regulators is mature** but there is scope to deepen coordination with the separate credit regulator (NCR).

## Appendix VI. Status Recommendations 2014 FSAP

Recommendations	Status
<p><b>Twin Peaks Reform:</b> Define clear and comprehensive institutional, governance, and accountability arrangements for prudential and market conduct regulation.</p> <p>Publish a roadmap for regulatory reform, with adequate resource allocation, monitoring, and evaluation, to carefully implement the move to twin peaks and minimize transition risks.</p>	<p>The Financial Sector Regulation act (FSR Act) that came into effect in April 2018 established the PA and the FSCA, and conferred powers on each entity. The PA is established as a juristic person operating within the administration of SARB, while the FSCA is established as a juristic person and a national public entity for purposes of the Public Finance Management Act. The FSR Act sets out the objectives, functions, governance arrangements and resource requirements for both agencies, as well as the requirements for collaboration and co-ordination (including requirements to establish memoranda of understanding) in order to reduce (the risk of) regulatory and supervisory duplication. The annual reports of the PA are tabled in Parliament through the Minister of Finance. The financial accounts of the PA form part of the annual report of the SARB, which is also tabled in Parliament. The FSCA, being a national public entity, is accountable to Parliament.</p> <p>The PA published its inaugural regulatory strategy for the period 2018-2021 in September 2018, while FSCA's inaugural regulatory strategy was publicly issued in October 2018. In broad terms, the respective regulatory strategies must set out the agencies' key priorities for the next three years; the intended outcomes of each agency's strategy; the guiding principles and matters that the agencies will consider when performing their respective functions; their approaches to administrative actions; and how they will give effect to requirements transparency, openness to consultation, accountability, consistency with international standards and general performance of their functions.</p> <p>The regulators have both published a regulatory strategy for the next period; the PA for 2021-2024 and the FSCA for 2021-2025. The FSCA will annually publish an regulatory plan that will cover the next three-year rolling period.</p>
<p><b>Microprudential:</b> Strengthen group-wide supervision of financial conglomerates, focusing on interconnectedness by monitoring intra-group transactions and aggregate exposures, and conducting joint on-site visits.</p> <p>Clarify objectives and strengthen the operational independence of</p>	<p>The FSR Act provides a basis for the regulation and supervision of financial conglomerates, with three financial groups having been designated as financial conglomerates in 2021. In December 2021, the PA published a regulatory framework for financial conglomerates relating to governance and risk management, intragroup transactions and exposures, risk concentrations and auditor requirements. Capital requirements for financial conglomerates will be field-tested with the designated groups during 2022.</p>

Recommendations	Status
<p>all financial sector supervisors in the relevant legislation in line with international standards.</p> <p>Enhance regulatory requirements of CIS. Introduce variable net asset valuation. Strengthen the supervision of CIS managers.</p> <p>Fully implement the Solvency Assessment and Management (SAM) regime and Treating Customers Fairly Initiative (TCF); give high priority in legislation to protecting policyholder rights and entitlements.</p>	<p>A draft standard relating to Net Asset Valuation and Pricing for CIS portfolios was published for public consultation in June 2017. After extensive industry consultation, a revised draft of the NAV Standard was submitted to NT in August 2019 for tabling in Parliament. A final Conduct Standard for the Net Asset Valuation and Pricing of Collective Investment Schemes was published in May 2020, followed by a comprehensive Guidance Note in April 2021.</p> <p>The inception of the SAM framework in July 2018 marked the biggest legislative overhaul of the insurance industry in 20 years. The Insurance Act, 2017 adopts a risk-based framework that is supported by Prudential Standards (42 to date) that cover financial soundness, governance and operations of the different types of insurance entities operating in South Africa. 'Treating customers fairly' (TCF) requirements have already been incorporated into various pieces of sectoral legislation and work is continuing to implement such principles in other laws. The new Conduct of Financial Institutions Bill (published for public comment in 2018 and 2019) is expected to establish an overarching TCF framework that will apply to all financial institutions.</p>
<p><b>Macroprudential:</b> Continue building a top-down stress test framework for banks and insurers. Give SARB more resources for data collection and analysis.</p>	<p>The 2018 TD and BU stress tests were completed successfully, with the results having been discussed in SARB's 2018 Financial Stability Review). The current stress testing framework (limited to the banking sector) was developed with technical assistance from the IMF and has been peer reviewed by the Deutsche Bundesbank. The development of an insurance stress test framework has commenced. SARB has approved additional resources to assist with data collection and analysis.</p>
<p><b>Financial Safety Nets:</b> Introduce a resolution regime compliant with the Key Attributes. Make SARB the resolution authority of all banks and SIFs.</p> <p>Adopt depositor preference and introduce an ex- ante funded deposit insurance scheme, with a back-up credit line from the NT.</p> <p>Remove constraints to early intervention powers and improve legal protection for resolution officials.</p>	<p>In August 2015, NT, SARB, and FSB jointly published a discussion paper on a new resolution framework for financial institutions in South Africa. A policy paper proposing the establishment of a deposit insurance scheme has been published in May 2017. Once promulgated, the Financial Sector Laws Amendment Bill, published for comments in September 2018, will formally designate SARB as resolution authority and establish the Corporation for Deposit Insurance.</p>

Recommendations	Status
<p><b>OTC Derivatives Market:</b> Improve data collection and enhance surveillance of the OTC derivatives market.</p> <p>Consider establishing a local CCP, with credit lines to the central bank and securities collateral placed at a central securities depository to reduce dependency on local banks.</p>	<p>South Africa has taken various steps to effect OTC reforms in the domestic legislative landscape. Amendments to the FMA create an empowering framework for the licensing, regulation and supervision of central counterparties (CCP). In addition, ministerial regulations have been issued to, amongst other, (i) establish ODP as a type of regulated person under the FMA; (ii) require the reporting of OTC derivative transactions to a licensed trade repository or licensed external trade repository; (iii) flesh out the regulatory framework for CCPs; and (iv) empower the PA and FSCA to determine eligibility criteria for OTC derivative transactions that should be subject to mandatory clearing.</p> <p>In line with its G20 commitments, the FSCA and the PA developed a Joint Standard which prescribes margin requirements for non-centrally cleared OTC derivative transactions. The final Joint Standard on Margin Requirements for non-centrally cleared OTC derivative transactions (“Standard 2 of 2020”) was published in June 2020. In June 2021, Joint Notice 1 of 2021 was published, which determined the effective date for the implementation of the margin requirements for non-centrally cleared OTC derivative transactions. In accordance with the authorities’ undertaking to continuously engage the industry on the effect of the Joint Standard, an implementation pack was published in August 2021 containing an implementation roadmap, information request and questionnaires to enable providers to make the necessary arrangements for the submission of information to the authorities by December 2021. The authorities are also working on a proposal to expand the eligible collateral as set out in the Joint Standard.</p> <p>Any Clearing House performing the functions of a CCP must comply with any requirements imposed by regulatory standards; such entities must be licensed as an Associate Clearing House or Independent Clearing House by December 2021 and be approved by the FSCA, SARB and PA to perform the functions of a CCP. JSE Clear has already been recognized as an associated clearing house that is performing the functions of a CCP. The FSCA and PA have developed a Joint Standard on requirements relating to CCP license applications, which was published in March 2021. The FSCA developed additional documentation, outlining the form and manner in which a CCP license application must be submitted to the FSCA.</p> <p>The FSCA has also developed an equivalence framework for external Trade Repositories, external CCP and external Central</p>

Recommendations	Status
	<p>Securities Depositories, which were published in December 2019. The next step is for the FSCA and the PA to jointly develop an exemption criteria framework in the form of a Joint Standard, as envisaged in the Financial Markets Act, 2012.</p> <p>The PA and the FSCA are also engaging the NT on the optimal design and market structure in respect of local versus foreign market infrastructures in the South African market. A regulatory framework for trade repositories is in place but no such entities are currently active in South Africa.</p>
<p><b>Competition:</b> Adopt the international best practices on provision and disclosure of market information to retail customers and to potential entrants into the payments and clearance systems.</p> <p>Adopt a rules-based entry and exit framework, and lower entry hurdles to the financial system.</p>	<p>The CPMI-IOSCO Principles for Financial Market Infrastructures (PFMIs) have not been formally adopted into domestic law in relation to payment systems. However, work is ongoing to finalize the National Payment Systems Act, which will provide SARB with the explicit basis for the adoption and implementation of the PFMIs. Payment services will also be a regulated activity in terms of the Conduct of Financial Institutions Act, which the National Treasury aims to table in Parliament during 2022.</p> <p>Furthermore, the revised NPS Act will address entry and exit frameworks for participants (including nonbanks) into the payment, clearing and settlement systems in line with international standards.</p>