



SOUTH AFRICA

SELECTED ISSUES

February 2022

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SOUTH AFRICA: THE FINANCIAL SECTOR-SOVEREIGN NEXUS¹

Globally, the close ties between the health of the financial system and the level of sovereign debt, or the “financial sector-sovereign nexus” has tightened during the ongoing COVID-19 pandemic as financial institutions have increased their holdings of domestic sovereign debt. In South Africa, the financial system’s exposure to sovereign credit is still relatively moderate, albeit rising, and the increased focus of the Prudential Authority on the associated risks provide reassurance. Options to mitigate such risks through the use of regulatory measures can be explored. However, absent the necessary fiscal consolidation and structural reforms, risks from the nexus to both the financial system and the sovereign will increase.

A. Introduction

1. Rising sovereign debt in the wake of the COVID-19 pandemic has generated renewed attention to the financial sector-sovereign nexus in South Africa. In the absence of fiscal space, the necessary measures to support the economy following the pandemic prompted a further increase in the stock of sovereign debt and worsened indicators of sovereign risk (Box 1 and Figure 1). The higher sovereign debt, in turn, tightened the nexus between the sovereign and the domestic financial system, notably banks, pension funds, insurance companies, and mutual funds in the context of reduced purchases and greater disposals of sovereign debt by nonresident investors. In addition to the direct channel (public debt acquisition by the financial sector), the nexus has indirect channels, including an exposure of financial institutions to domestic economic activity.

2. Rapid increases in the financial sector-sovereign nexus have been a global matter of concern, particularly since the late-2000s. During the Global Financial Crisis in the late-2000s, the public debt-to-GDP ratio rose across many countries, especially in the European periphery. Prompted by foreign investors’ flight and cheap ECB funding, many peripheral European banks deepened their home bias, absorbing sizeable amounts of domestic sovereign debt, both in the primary and secondary markets. As the bank-sovereign nexus became entrenched, concerns regarding the health of the banking sector rose. These concerns were due, inter alia, to rising asset quality problems, including valuation losses on banks’ sovereign debt holdings on the one hand, and sovereign credit quality as governments provided guarantees or other support to their banking systems, on the other. An increased bank-sovereign nexus was also observed across many advanced economies. In this regard, the IMF (2015) examined the complex linkages between the health of the banking system and sovereign debt, including implications for fiscal and monetary policy, while Dell’Ariccia et al. (2018) provided a broad overview of ways of managing the bank-sovereign nexus.

¹ Prepared by Heiko Hesse (SPR) and Ken Miyajima (AFR).

Box 1. Indicators of Rising Sovereign Risks in South Africa

A commonly used indicator of external sovereign risk, which suggests it is not particularly elevated for South Africa, may not fully capture the extent of fiscal risks.

- **The sovereign credit default swap (CDS)** could be used to measure the sovereign’s “external” credit risk in US dollar terms. South Africa’s sovereign CDS spread rose significantly (to around 430 basis points) in 2015–16 when Finance Minister Nene left, and to around 530 basis points in 2020 during the COVID-19-related global market turmoil. With the improvement in global risk sentiment and appetite for South African assets, the sovereign CDS spread has been trading at around the upper end of the “normal” range relative to its 2010–19 performance (200–300 basis points).
- However, the sovereign’s debt-to-GDP ratio is around 70 percent (reflecting the recent GDP revision), significantly above its previous peak of around 45 percent registered in the 1990s. The local currency sovereign term premia, calculated as the long-term yield differential to short-term yields, remains at around its historical high.

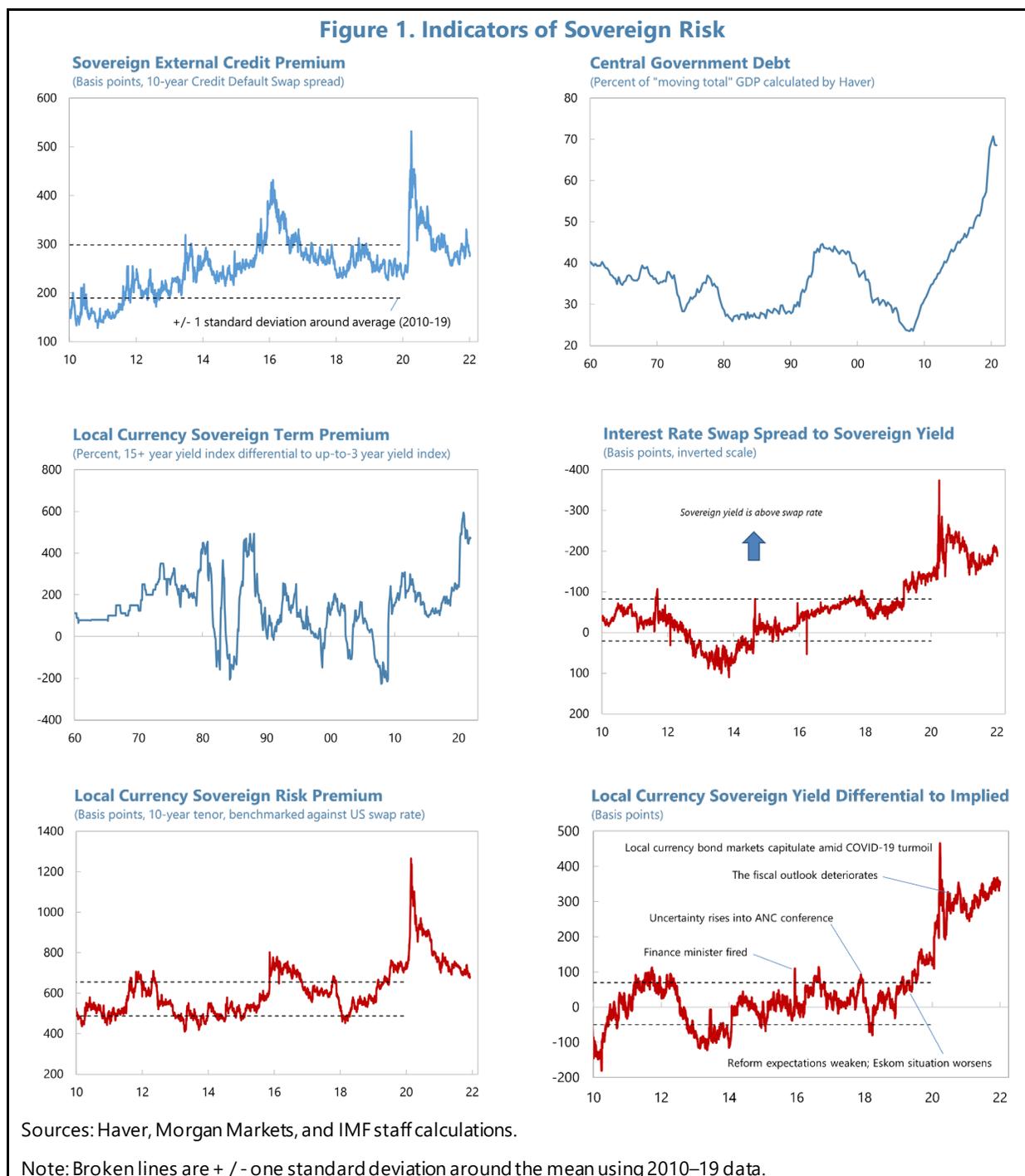
By contrast, indicators of local currency sovereign risk are elevated.

- **The swap spread.** Defined as the difference between the fixed rate leg of interest rate swap contracts and the maturity-matching sovereign yield, this spread is usually positive, representing the counterparty credit risk of banks trading swap contracts, and would widen as risk aversion increases. However, South Africa’s swap spread has been negative, as high fiscal risks elevate sovereign yields, and the lack of private sector investment opportunities (and attendant demand for “paying” swaps) caps swap rates. The swap spread narrowed from around –370 basis points during the worst of the COVID-19 market turmoil to around –200 basis points in early-December 2021. Nonetheless, it remains wider than previous levels of around –100 basis points and far outside of the “normal” range based on its historical performance.
- **The local currency sovereign risk premium (LCSRP).** LCSRP is the local currency sovereign yield spread to the “local currency US sovereign yield”—the latter is constructed using US sovereign yields and cross-currency swaps. Du and Schreger (2016) argue that the LCSRP tends to exhibit a lower average level, weaker cross-country correlations, and lower sensitivity to global risk factors than its CDS counterpart. The estimated LCSRP is comparable to previous highs including the one registered in 2015–16.¹
- **The actual yield differential to its implied counterpart.** The implied counterpart is calculated as the sum of three components—the US yield, South Africa’s sovereign CDS spread (in US dollars), and long-term inflation expectation differentials between South Africa and the US. The actual yield differential to its implied counterpart has moderated from more than 460 basis points in the spring of 2000 to around 350 basis points. However, the measure remains significantly above the previous highs of around 100 basis points and the upper end of the “normal” range based on its historical performance of around 70 basis points. Prior to the COVID-19 pandemic, this indicator had already widened as the Eskom situation started to worsen.

¹ US swap rates are used instead of US sovereign yields to compute the local currency US sovereign yield, as their differences are very small relative to the level of South African sovereign yields and for ease of calculation.

3. This paper documents several aspects of the financial sector-sovereign nexus in South Africa and policy discussions about how to mitigate associated risks. It examines the size of sovereign debt in financial intermediaries’ balance sheets, measures the local currency sovereign risk, and discusses the transmission of risks from the government to the financial sector and vice versa. It surveys the literature on the fiscal cost of banking crises—strong linkages between banks and the sovereign could substantially weaken bank’s balance sheets, and government interventions have been

found to be expensive in cases of banking problems in some countries. This nexus is likely to remain important, and the paper surveys some recommendations, in line with the 2021 Financial Stability Assessment Program (FSAP), on how to limit risks from the bank-sovereign nexus.



B. Importance of Sovereign Debt for Financial Intermediaries' Balance Sheets

4. Globally, banks hold domestic sovereign debt for a number of important reasons.²

International prudential standards set by the Basel Committee on Banking Supervision (Basel standards) provide national discretion in treating bank holdings of domestic sovereign debt with respect to risk weights, large exposures, market risk, and credit risk mitigation, thus leaving room for regulatory incentives (BCBS, 2017; Dell'Ariccia et al., 2018). The preferential treatment given to sovereign debt relative to other financial assets in domestic regulatory frameworks is likely amplified during economic downturns (IMF, 2015). Sovereign debt is considered as a safe and high-quality asset for banks to meet the liquidity requirements, a strong collateral asset for central bank operations and secured wholesale funding, and a benchmark for pricing financial assets. Sovereign debt could also represent an important source of income particularly when income from other sources underperform.

5. In addition to the incentives mentioned above, country authorities often take policy actions to further support banks' holdings of government debt during times of stress. As discussed by Asonuma, Bakhache, and Hesse (2015a), these actions could include liquidity extension to banks, direct purchases of government debt, and/or conditional commitments to purchase government debt by central banks. Financial repression and moral suasion are sometimes used to 'convince' banks to purchase government bonds, especially in the primary market.³ At the same time, the supply of public debt often substantially increases during times of stress, including as a result of countercyclical fiscal policy. With the quality of other assets deteriorating, domestic banks tend to prefer holding sovereign debt to help safeguard the health of their balance sheets. In addition, private-sector investment opportunities tend to decline during times of stress, further pushing banks toward domestic sovereign debt holdings.

6. Several factors have been identified as important drivers of bank holdings of sovereign debt across countries. Using a sample of advanced and emerging market economies (EMEs), Asonuma, Bakhache, and Hesse (2015a) show that banks' bias to invest in domestic sovereign debt is associated with high uncertainty and increasing inflation (potentially capturing signs of macroeconomic instability or increased moral suasion). In contrast, the private-sector credit-to-GDP ratio (partly reflecting banks' investment opportunities outside the government) and institutional quality (capturing government stability and socioeconomic conditions) are significantly negatively related to home bias. Moreover, Dell'Ariccia et al. (2018) provide empirical evidence that banks hold more government debt during periods of high interest rates and in countries with lower private-sector credit-to-GDP ratios. Banks operating in less developed financial systems—for instance, with fewer high-quality lending opportunities—also hold more government debt.

² Dell'Ariccia et al. (2018) provide a comprehensive overview.

³ Traditionally, home bias in banks' holdings of domestic government debt has been linked to financial repression (see, e.g., Reinhart and Sbrancia, 2011) that gives rise to directed credit to the government by captive domestic lenders, such as banks, and a tighter connection between government and banks.

7. **High sovereign debt holdings by financial institutions could create important problems.**

For instance, high bank holdings of domestic sovereign debt (home bias) may be associated with low private-sector credit growth in emerging and developing countries, mainly reflecting a portfolio rebalancing of banks toward safer and more liquid assets in times of stress (Bouis, 2019). Issues surrounding banks' home bias in sovereign debt holdings especially came to the forefront during the Euro area crisis. Studies on eurozone countries highlight that, inter alia, fiscal space, changes in perceived sovereign credit quality, and state ownership of banks contribute to the increased propensity of banks to hold domestic sovereign debt.⁴

8. Many of these factors are likely to remain relevant for South Africa. High-quality liquid assets (HQLA) eligibility of sovereign debt, amid shortages of other HQLA eligible assets, and phasing out of the SARB's committed liquidity facility (CLF) provide banks with incentives to hold sovereign debt.⁵ The largest six banks, on average, hold close to 90 percent of HQLA in Level 1 unencumbered assets, which are mainly in domestic government securities and central bank reserves. The largest banks act as primary dealers in the sovereign debt market, absorbing and passing on the debt, and market makers in the secondary market (SARB, 2021). Risks from the nexus to both the financial system and the sovereign will increase absent sufficient fiscal consolidation to keep the supply of sovereign debt in check. Risks will also increase if prospects for private investment, demand for bank credit, and broader economic activity remain weak, all of which are also partly constrained by remaining structural rigidities and limited options to diversify away for HQLA purposes.

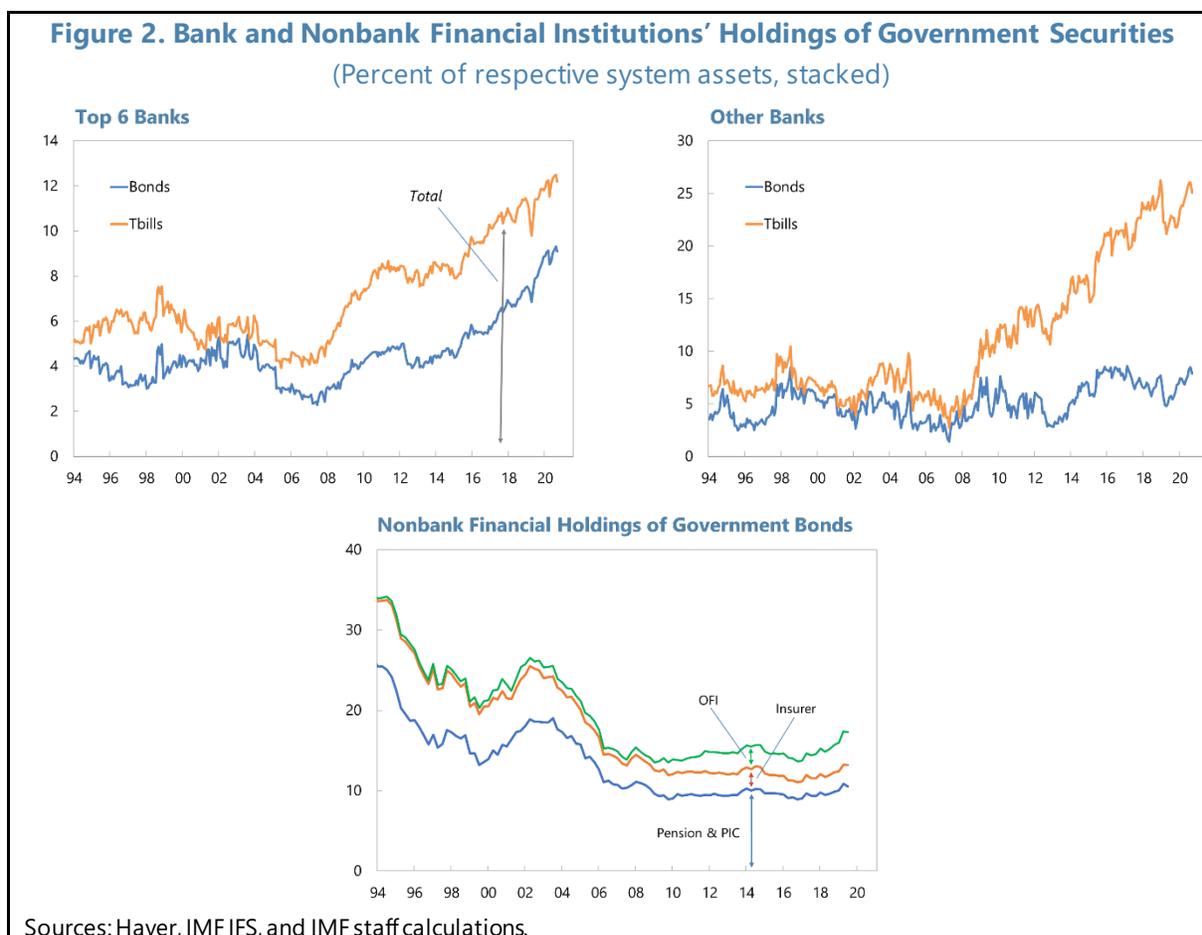
C. Government Bond Holdings by Banks and Nonbank Financial Institutions in South Africa

9. Holdings of government securities relative to assets have increased for banks but remained relatively low for nonbanks. An analysis of the largest 6 banks ("top 6"), representing a little over 90 percent of system assets, and the rest ("other banks") shows that the holdings of government securities, bonds, and T-bills by the top 6 moderated from 6–8 percent of assets in the 1990s to nearly 4 percent in early-2008. Since then, such holdings rebounded to around 8 percent of assets by end-2011, with bonds representing around 60 percent. Bank holdings of government securities started to rise again in 2017 and reached somewhat above 12 percent of assets by January 2021. The increase was driven mainly by bond holdings, raising the bonds' share of total holdings to 75 percent. Holdings of government securities by "other banks" marginally moderated to somewhat below 5 percent of assets by early-2008. Since then, such holdings rose to nearly 25 percent of assets in January 2021. The increase was due mainly to T-bill holdings, taking their share of total securities

⁴ Findings by Cornand et al. (2014) suggest that fiscal space (measured by the ratio of debt on total tax revenue) and changes in investor expectations about governments' debt sustainability (captured by shocks on sovereign 10-year bond spreads) were key determinants to the home bias surge in a number of Eurozone countries during 2007–12. Furthermore, De Marco and Macchavelli (2014) show that banks with a significant government ownership exhibited a higher home bias conditional on receiving liquidity injections by their governments, with an effect found to be more than twice as large for banks that were recapitalized by their European peripheral governments than for other European banks.

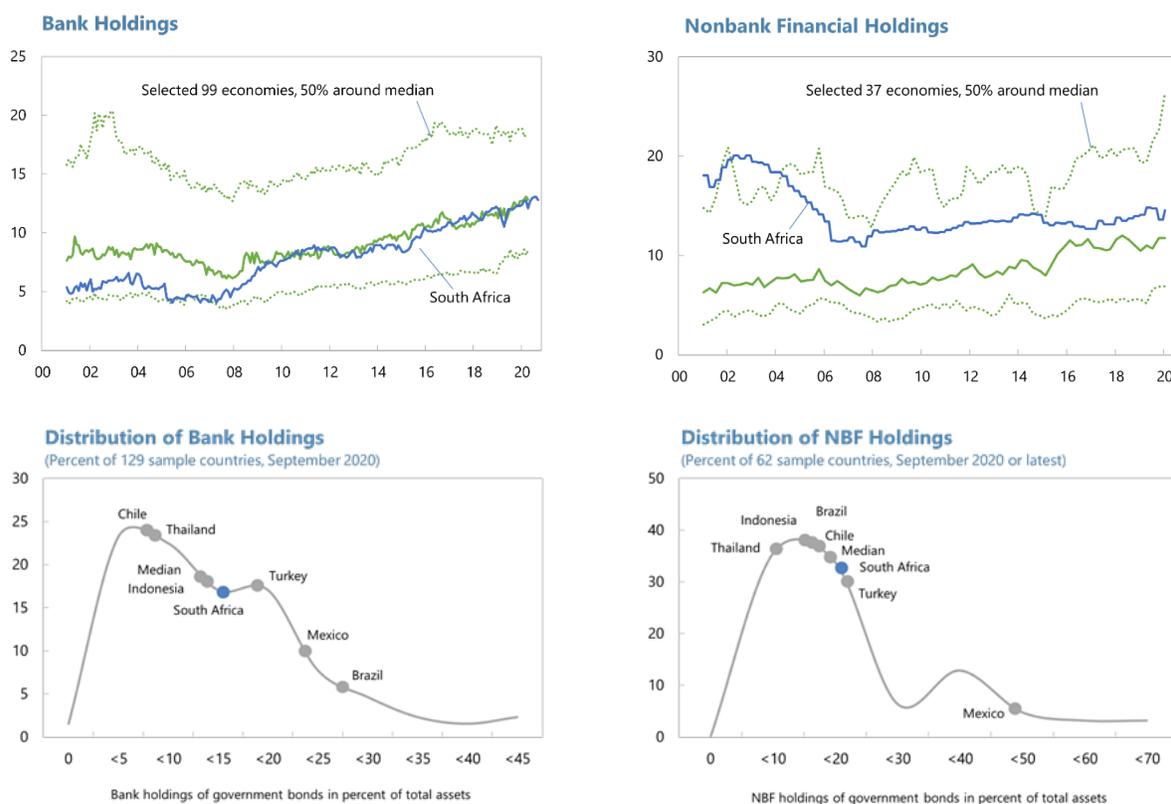
⁵ CLF was introduced as the stock of sovereign debt was not sufficient to meet banks' HQLA needs. Banks using IRB apply positive risk weights but they are relatively low. Banks using the standardized approach apply zero risk weights.

holdings to around 70 percent. By contrast, nonbank financial institutions shed their government securities holdings from close to 35 percent of assets in the 1990s to around 15 percent in the 2000s. The ratio rose moderately to 17 percent by mid-2020, due mainly to holdings by “other financial institutions” (OFIs), which include mutual funds and collective investment schemes.



10. Cross-country comparisons suggest that relative to assets, government bond holdings by the South African financial sector are broadly comparable to the “norms”. Data for South Africa are compared to those for all countries for which data are available. South African banks’ government bond holdings as a share of assets were relatively low in the early-2000s, near the first quartile of 99 countries. Holdings then moved up to the cross-country median in the late-2000s, and broadly tracked the gradual increase in the median to date. Unlike banks, nonbanks held relatively large amounts of government bonds as a share of assets in the early-2000s—at around the third quartile of 37 countries. After declining toward the cross-country median in the early-2000s, the ratio remained broadly flat to date, thus closing the distance from the cross-country median, which gradually increased. As of September 2020, South African bank holdings of government bonds were somewhat below the cross-country median of 129 countries, but above the levels in Brazil, Mexico, and Turkey. South African nonbanks were positioned somewhat below the cross-country median of 62 countries, similar to Turkey and above Mexico.

Figure 3. Bank and Nonbank Financial Institutions' Holdings of Government Securities
(Percent of assets)



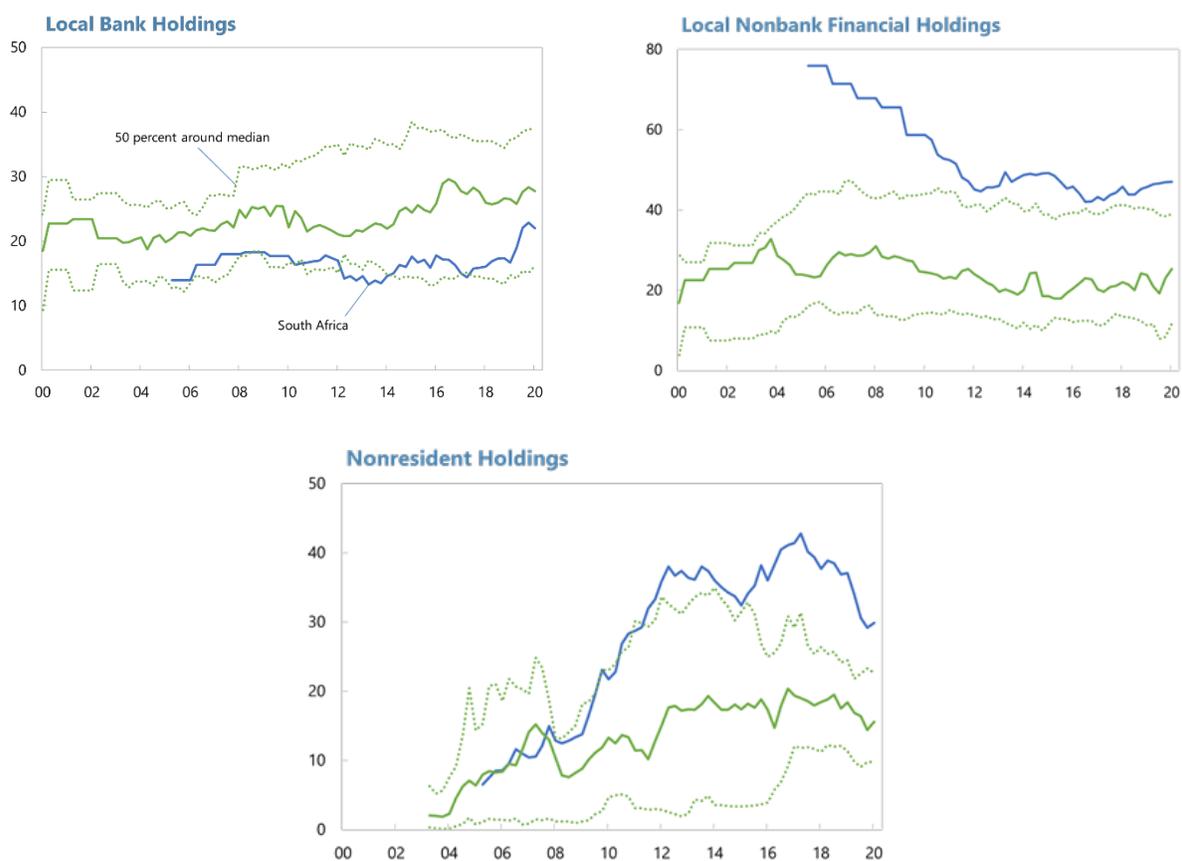
Sources: Haver, IMF IFS, and IMF staff calculations.

11. Relative to the stock of bonds outstanding, holdings by nonbanks and nonresidents appear relatively high in South Africa. Compared with selected EMEs (*in the Sovereign Debt Investor Base*), South African banks have notably increased their government bond holdings as a share of the total stock during the COVID-19 pandemic, but their holdings still remain below the EME median. Nonbanks progressively reduced their government bond holdings as a share of the total stock through the early-2010s, but still remain in the top quartile. Nonresident holdings rose from around the median in the early-2000s to the top quartile in the mid-2010s and have remained there even after nonresidents sold government bonds during the COVID-19 pandemic.

12. Looking ahead, the cost of funding for the sovereign, and for the economy more broadly, could increase. A simple correlation analysis suggests that banks in South Africa tend to increase their holdings of government securities when the yield curve steepens (potentially as government securities' valuation becomes more attractive). Moreover, a recent SARB econometric analysis (Makrelov et al., 2021) suggests that higher fiscal risks would prompt banks to increase their

capital as a mitigant, making it more expensive to hold such bonds.⁶ Indeed, IRB banks have been increasing risk weights for sovereign exposure up to 10 percent in line with the rising public debt ratio and weakening sovereign credit ratings. In addition, South African sovereign bond valuations could become more volatile, potentially increasing the risk of large valuation losses. Such losses could compress profitability and capitalization to the extent that the larger four banks mark to market roughly one half of their government bond holdings. Results from the FSAP's stress tests warn about the vulnerability of banks to a weakening of sovereign credit quality.⁷ As a result, banks would demand higher yields to hold sovereign debt.

Figure 4. Resident and Nonresident Holdings of Emerging Market Local Government Bonds
(Percent of stock of government bonds)



Sources: Haver, IMF Sovereign Debt Investor Base, and IMF staff calculations.

⁶ The analysis is based on actual capital buffer data from the South African Prudential Authority and dynamic panel data econometric methods by Arellano and Bond. While the positive relationship between the sovereign risk premia and capital buffers is found to be robust across different specifications, it is based on past data. Thus, it is not clear whether South African banks will always be able to increase their capital buffers in a hypothetical situation of prolonged high elevated sovereign risk, as banks' balance sheets would be severely strained.

⁷ Widening of external sovereign credit spreads by 200 basis points would lead to a fall in the aggregate capital ratio by some 3 percentage points.

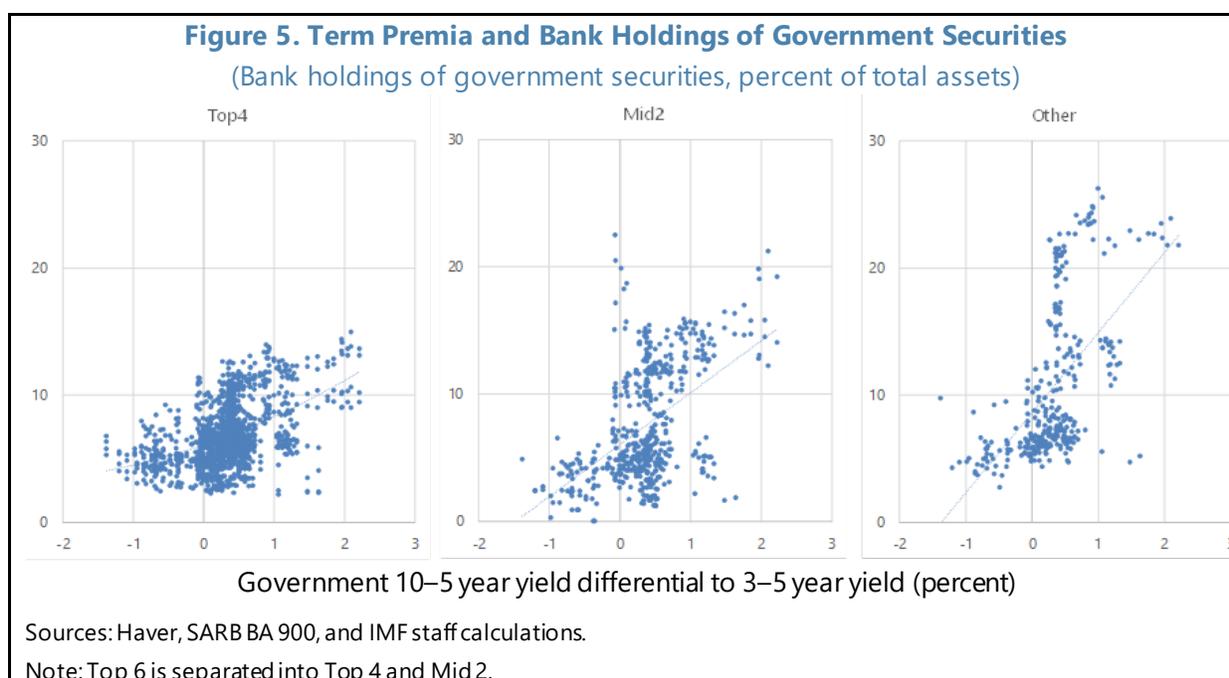


Table 1. Accounting Treatment of Bank Holdings of Government Bonds
(Percent of total)

Bank	Trading / FV thr. Income	Available for Sale	Held to Maturity
1	67.6	0.4	32.0
2	53.5	0.2	46.3
3	52.1	26.9	21.1
4	44.3	3.2	52.5

Sources: Fitchconnect and IMF staff calculations.

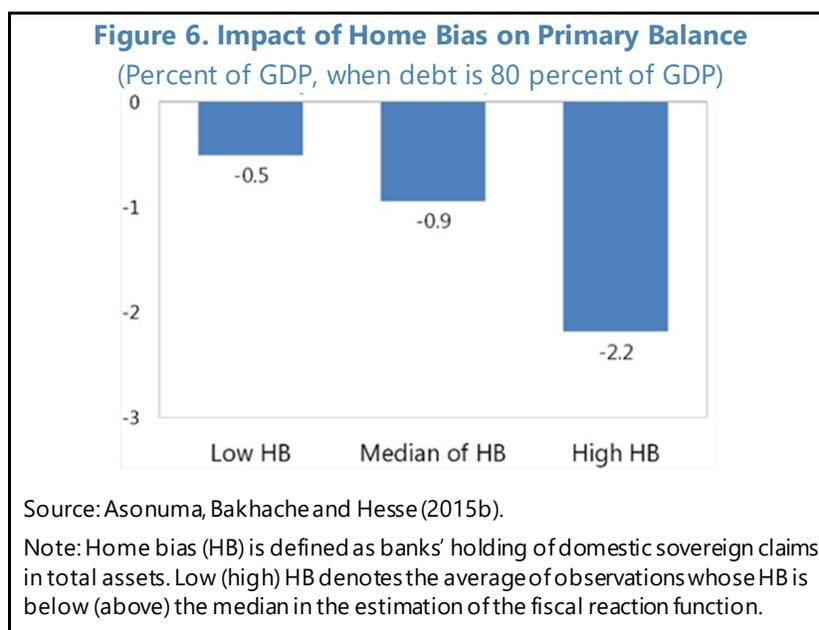
D. Fiscal Risks' Spillovers and Feedback Loops

13. There are several key channels through which sovereigns could affect banks. Dell’Ariccia et al. (2018) and SARB (2021) identify exposure, safety nets, and macroeconomic linkages as key channels. The *exposure channel* reveals that bank holdings of sovereign bonds are adversely affected by falling sovereign bond prices, which could also lead to higher bank wholesale funding costs as the collateral value of sovereign bonds falls.⁸ The *safety net channel* refers to the contingent liabilities that governments incur given their traditional role as main backstops in case of banking problems, which

⁸ According to estimates by Dell’Ariccia et al. (2018) for a hypothetical bank, a 10 percent valuation loss on its sovereign bond portfolio (representing 10 percent of the bank’s assets, assuming 6½ percent leverage ratio) would imply a 15 percent reduction in the capital ratio.

could result in market concerns if fiscal space is limited, feeding into lower bank profits.⁹ With sovereign and bank ratings inherently intertwined, sovereign rating downgrades are passed on to bank ratings, usually increasing bank funding costs. There are also pertinent *macroeconomic links* that can propagate shocks from higher public sector deficits and debt to higher sovereign and domestic interest rates, adversely impacting bank balance sheets.

14. There are channels of spillbacks through which the banking sector can impact the public sector balance sheet directly and indirectly. IMF (2015) argues that the direct effect occurs when the government intervenes in the banking sector to manage a crisis (contingent liabilities become real liabilities and worsen the debt outlook) and the indirect one occurs when banking-sector developments affect the main drivers of debt (growth, primary balance, and interest rate). IMF (2015) shows that the more an economic boom is driven by banks, the deeper is the ensuing recession, with a longer recovery compared to a boom-bust cycle driven by nonbanks. Similarly, the fiscal sector's "boom-bust" cycle is more pronounced and damaging when it is driven by the banking sector.



15. In addition, banks' home bias in their sovereign debt holdings tends to delay fiscal consolidation until debt reaches dangerously high levels. The propensity of banks to hold domestic sovereign debt over foreign sovereign debt creates a captive investor base and may provide greater fiscal breathing space, potentially delaying the necessary fiscal adjustment. Drawing on an estimation of fiscal reaction functions for advanced and emerging economies, Asonuma, Bakhache, and Hesse (2015b) show that when banks exhibit higher home bias in their sovereign debt holdings,

⁹ Empirical findings by the Dell'Ariccia et al. (2018) show that Euro area banks in countries with weaker sovereign credit quality (proxied by sovereign CDS spreads) tended to pay higher deposit rates, and attribute the finding to the view that prospective government support was perceived as less credible.

fiscal consolidation by the sovereign tends to be slower, *ceteris paribus*.¹⁰ According to Figure 6, a relatively high banking sector home bias (relative to the sample median) is associated with a substantially weaker average primary fiscal balance (relative to the sample of economies with a given level of public debt, here 80 percent of GDP, somewhat above the 70 percent of GDP in 2020 for South Africa). Dell’Ariccia et al. (2018) and Ongena et al. (2016) find evidence of moral suasion during the Euro area crisis, where domestic banks play a greater role than foreign banks in accommodating higher sovereign financing needs.

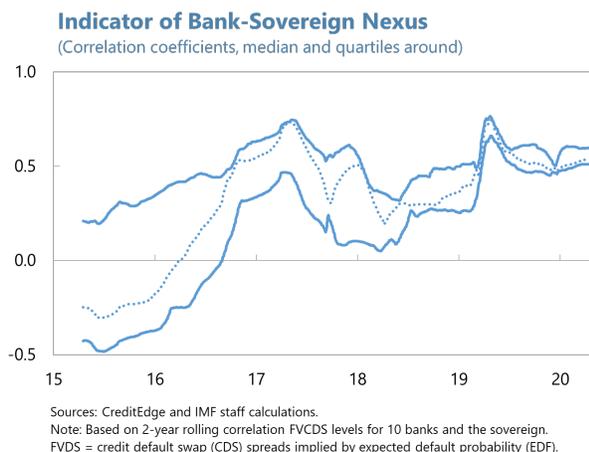
16. In South Africa, the increasing interrelationship between banks and the government poses challenges going forward. All three channels (exposure, macroeconomic, and safety net linkages) are relevant for South Africa.

- **Exposure channel:** Banks hold government bonds for the number of reasons discussed earlier. The valuation losses on sovereign bond holdings (and the collateral used for funding) could pressure banks’ profitability, capital position, and funding.
- **Macroeconomic channel:** Both banks and the sovereign affect and are affected by macroeconomic aggregates, such as output growth, fiscal policy, and interest rates. Since 2010, all successive foreign currency sovereign downgrades by the main three rating agencies to eventually below investment grade (6 downgrades in total) have been matched by downgrades of banks’ credit ratings, as the latter are capped by the sovereign ratings. With the fiscal deficit projected to remain elevated amid steadily increasing public debt levels, the absorptive capacity of the banking system will be key if nonresidents take a cautious stance.
- **Safety net channel:** Moral suasion and financial repression might have a short-term benefit in terms of having a captive domestic investor base and providing additional fiscal breathing space. However, this comes at the potentially high cost of making the bank-sovereign nexus even more vulnerable to shocks. The government tends to provide a backstop to banks, which creates a linkage between the credit quality of banks and the sovereign. Perception of a less credible backstop would weaken the financial sector’s perceived credit risk and lead to higher funding costs than otherwise. In turn, perception of a higher chance (and scale) of fiscal support would reduce the sovereign’s perceived credit quality. More broadly, it is important, *inter alia*, to finalize the Financial Sector Laws Amendment Bill (FSLAB) to improve the bank resolution framework and introduce a deposit guarantee scheme.

¹⁰ Their model specifications closely follow Ghosh and others (2011) to include both square and cubic terms of lagged debt to capture two inflexion points in the fiscal reaction function. Specifically, Ghosh and others (2011) explain the appropriateness of the nonlinear fiscal reaction function as follows: at a very low level of debt, there is little (or even a slightly negative) relationship between lagged debt and the primary balance. As debt increases, the primary balance rises, but the responsiveness eventually begins to weaken, and then actually decreases at high levels of debt.

Box 2. Feedback of Bank and Sovereign Risks

The correlation between bank credit risk and sovereign credit risk has increased. Daily CDS spreads estimated from the expected default frequency (EDF) are used to calculate the two-year moving correlation between the sovereign and ten banks for which the indicator is available from CreditEdge. The correlation has increased, and the dispersion has tightened over the years, mainly as small banks' correlation with the sovereign moved from either negative or small positives to levels comparable with large banks' correlation. Some of the increases likely reflect perception of higher risk, which tends to push the asset price correlation higher.



E. Fiscal Cost of Banking Crises in the Literature

17. Over the past four decades, banking crises have contributed to large output losses and fiscal costs. Empirical evidence shows that the median output losses from banking crises are 35 percent of GDP in high-income countries and 14 percent of GDP in low- and middle-income countries. In the former, the larger size of their financial systems and longer crisis duration contributed to the higher output cost (Laeven and Valencia, 2018). Similarly, the median increase in public debt in the four years after a banking crisis is larger in high-income countries (a little over 20 percent of GDP) than in low- and middle-income countries (16–17 percent of GDP), probably reflecting larger fiscal space in high-income countries allowing them to pursue greater countercyclical policies and use automatic stabilizers (IMF, 2015). There is also a large variation across countries—during the Asian financial crisis, Indonesia's fiscal costs reached more than 50 percent of GDP, while during the global financial crisis, fiscal costs in Iceland and Ireland exceeded 30 percent of GDP (Dell'Ariccia et al., 2018).

18. A number of factors drive the fiscal costs of banking crises. Direct fiscal costs of banking crises were higher in countries where banks were more leveraged and reliant on external wholesale funding prior to the crises (IMF, 2015). Banks that are dependent on external wholesale funding usually face higher rollover risks and possibly solvency risks that may necessitate greater public funds for preemptive recapitalization. Countries that guarantee the entire bank liabilities during a crisis may limit up-front deposit disbursements or issuance of debt, but face, on average, higher direct fiscal costs (see also Dell'Ariccia et al., 2018). By contrast, direct fiscal costs are found to be lower in countries with higher quality of supervision and greater credibility that the government would provide sufficient financial safety nets, such as broad deposit insurance coverage. Also, swifter government intervention tends to lower fiscal costs ex post (Laeven and Valencia, 2010).

19. There are several lessons for South Africa from the experiences of banking sector stress elsewhere. In general, South Africa's banks have strong capital and liquidity buffers and are well

regulated. They have navigated both the Global Financial Crisis in the late-2000s and the ongoing pandemic well. Stress tests by the joint IMF–World Bank FSAP show their resilience to adverse shocks. However, rising public-sector fiscal deficits and debt amid an increase in sovereign risk premia could lead to concerns about banks’ increasing holdings of domestic sovereign debt. As another important channel, any prolonged macroeconomic difficulties could be challenging for the domestic banking system despite their buffers and good management.

F. Mitigating the Financial Sector-Sovereign Nexus Risks

20. Macroeconomic policies are the first line of defense and using potential regulatory measures would take the authorities into new territory. Fiscal consolidation and structural reforms that IMF staff has recommended will help reduce the supply of sovereign debt, boost medium-term growth, improve banks’ lending opportunities, and further strengthen bank capital buffers. Mitigating risks from the financial sector-sovereign nexus using regulatory measures would be a new approach, with few countries currently choosing to resort to such measures.

21. The literature has advocated several key principles as to how risks associated with the financial sector-sovereign nexus could be addressed. Finalizing the FSLAB, enhancing the resolution framework, and introducing a deposit guarantee scheme will go a long way in enhancing the safety net channel. Dell’Ariccia et al. (2018) argue that buffers would usefully reduce risks from the bank-sovereign nexus—stronger bank capital, sound fiscal positions, and prudent macro-structural policies help reduce risks. Avoiding measures, such as onerous concentration limits, that might have unintended pro-cyclical consequences, is important. Unintended consequences could take the form of an excessive reduction of liquidity, bond market pressures, or other unwarranted macro-financial dynamics. These unintended consequences could be especially problematic during a sharp economic downturn amid declining sovereign bond prices.

22. The following carefully calibrated regulatory measures to alleviate the bank-sovereign nexus, discussed during the 2021 FSAP mission, will be useful:

- **Increasing risk weights on sovereign bond holdings.** IRB banks have already increased risk weights on their holdings of domestic sovereign debt and therefore hold more capital against them. Similarly, under national discretion, a (relatively low) risk weight may be applied to domestic sovereign debt denominated and funded in domestic currency while being mindful of potential pro-cyclical effects.
- **Applying Pillar 1 or 2 capital surcharges.** Surcharges could be applied on holdings of domestic sovereign bonds only above certain thresholds. Such surcharges would be calibrated to reflect perceived risks and discourage excessive concentration, while limiting risks of unintended side-effects (e.g., an overly higher cost of meeting liquidity requirements).
- **Introducing a quantitative measure to reduce concentration.** As an important downside risk, putting a cap on concentration could create ‘cliff effects’, that is, as bank holdings of

domestic sovereign debt suddenly rise either close to or past the limits, banks might quickly shed “excess” bond holdings.

23. The process of potential implementation was also discussed:

- To achieve the objectives, the measures would need to be gradually introduced, carefully calibrated, and clearly communicated.
- The measures could best be introduced after the ongoing normalization of the COVID-19-related prudential requirements has been completed.
- A reasonable transition period will be needed to give banks time to adjust their balance sheets. An announcement of envisaged near-term measures, with the applicable transition period, would help prevent further intensification of the nexus and smooth adjustment.

24. Importantly, regulatory efforts need to be supported by fiscal consolidation to reduce the supply of government debt as well as structural reforms to boost growth durably.

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THE ROLE OF SOEs IN SOUTH AFRICA: ISSUES AND POLICY OPTIONS¹

With a dominant role in network industries, SOEs in South Africa provide key inputs to business and contribute to capital formation. However, the deterioration in their operational and financial performance over time and the increasing burden they pose on the budget point to the urgent need to reduce their large footprint in the economy and address their weak performance. Both are major obstacles to economic efficiency and competitiveness and to the growth of productive private sector firms. Reform options include undertaking a comprehensive inventory of existing SOEs to decide whether to divest, liquidate, or keep them after being restructured. SOEs that are retained should have clearly defined mandates, strong governance, and strict oversight structures to operate in competitive markets with autonomy.

A. Introduction

1. **SOEs play a significant role in the South African economy, dominating key network industries.** SOEs are prevalent in the utilities, transportation, and communications sectors as well as the provision of developmental financial services. Given SOEs' varied roles in supplying key inputs for businesses and their significant share in real gross capital formation (averaging 13 percent of total in the last five years), SOEs' operations are an important determinant of the productivity and the competitiveness of the economy. As recipients of substantial support from the budget in the form of transfers and guarantees, SOEs create large direct costs and are an important source of fiscal risks in the form of contingent liabilities.
2. **In recent years, the debate about whether SOEs are delivering on their mandates in a cost-effective manner has intensified.** As public finances have become increasingly constrained, the growing burden of SOEs on the budget has been a key area of concern. Moreover, deficiencies in SOEs' service delivery, especially in electricity provision, combined with corruption scandals in procurement and administration, have been a source of discontent and led to demands for reform. In FY20/21, direct transfers from the government to SOEs amounted to 1.6 percent of GDP compared to an already high average of 1 percent of GDP in the previous five fiscal years. The stock of government guarantees on SOE borrowing amounted to 10.3 percent GDP in FY20/21, about 2 percent of GDP higher than in FY15/16. In addition, transfers averaging 0.5 percent of GDP per year in FY21/22 and the next two fiscal years have been budgeted. Although a decline in transfers to SOEs is budgeted, there is a high risk that the projected transfers would become insufficient if progress with restructuring plans, especially in the electricity sector, does not accelerate.
3. **This paper aims to contribute to this debate and discuss policy options for reform.** Section B discusses the South African SOE landscape, including general characteristics, the legal and institutional framework, and SOEs' financial and operational performance. Section C puts the South

¹ Prepared by Alejandro Simone and Zhangrui Wang (AFR).

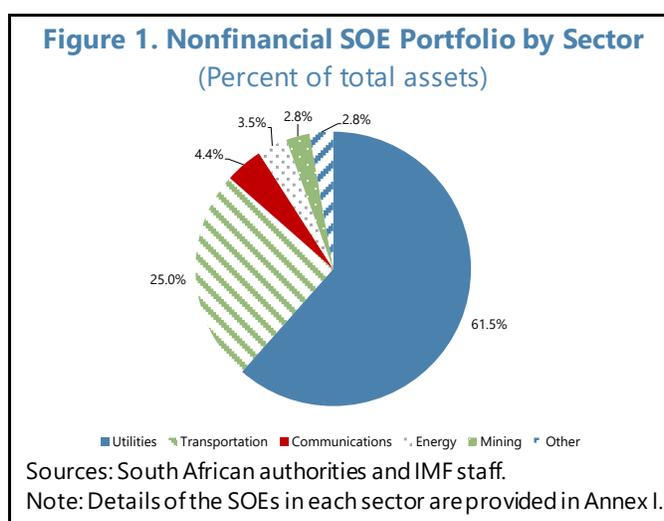
African SOE scene in an international perspective. Section D discusses international experience with SOE reform. Section E concludes with policy options for reforming SOEs.

B. The South African SOE Landscape

General Characteristics²

4. SOEs' assets amounted to 34 percent of GDP at end FY19/20. Nonfinancial SOEs account for 86 percent of total assets while financial SOEs account for the remainder. Of the total nonfinancial SOEs, the three largest—Eskom (electricity), Transnet (transportation), and Telkom (communications)—represent about $\frac{3}{4}$ of assets, 80 percent of revenue, and 97 percent of loan debt (11.4 percent of GDP).³ Of the total financial SOEs, the three largest—the Development Bank of Southern Africa, the Industrial Development Corporation (both developmental financing), and the Land Bank (agricultural financing)—account for 94 percent of assets, 95 percent of revenue, and 91 percent of loan debt (2.8 percent of GDP).

5. Most of nonfinancial SOEs are in the utility and transportation sectors and fully owned by the government (Figure 1). The utilities sector comprises the electricity (Eskom) and water enterprises (i.e., the water boards and the Transcaledon Tunnel Authority (TCTA), a related water infrastructure company). The transport sector comprises mainly the commercial railways, ports, and pipeline infrastructure SOE (Transnet), the airlines (SAA and SAX) and the related airport, and air traffic and navigation companies (ACSA, ATNS), and passenger railway transportation (PRASA). SOEs operating in communications, energy, and mining account for most of the remaining assets, with Telkom, the Central Energy Fund (CEF), and the State Diamond Trader (STD) being the largest companies in each of those sectors. Several smaller companies are also active in forestry (SAFCOL), postal services (SAPO), and defense (Denel). In terms of the ownership structure of non-financial SOEs, only Telkom and ACSA have private shareholders.



² The figures in this section cover 40 non-financial SOEs (including some subsidiaries of major SOEs), SANRAL (road operation and construction agency) recently reclassified as an extra-budgetary fund, and 7 financial SOEs, mostly belonging to the national (central) government, except for the water boards which are subnational SOEs. Financial and non-financial SOEs at the subnational level are for the most part not included in the analysis given data limitations.

³ Telkom is included as a non-financial state-owned company in line with the treatment in SARB's quarterly bulletin statistical tables, which is aligned with the IMF Government Finance Statistics Manual.

Institutional Framework

6. Several pieces of legislation and a protocol on corporate governance establish the SOEs governance framework. SOEs are created by law and can be established at all levels of government. They are subject to enabling legislation (EL), the Companies Act (CA), and the Public Finance Management Act (PFMA). While the contents of EL vary across SOEs, EL usually contains a description of SOE objectives and requirements on governance, reporting, and accountability. The CA establishes the corporate governance for private sector firms, which also applies to the few SOEs that are corporatized. The PFMA defines the oversight responsibility for SOEs' corporate plans, shareholder compacts, and reporting requirements. The PFMA also establishes principles regarding the role and responsibilities of SOE boards. The protocol of corporate governance is a non-legislated code of conduct on SOE governance endorsed by the cabinet. It defines the relationship between the government and SOEs while seeking to maintain the independence of SOEs from the executive in their day-to-day operations.

7. SOE objectives are established in their enabling legislation, by both the shareholder departments and the cabinet. The shareholder departments are responsible for ensuring that SOEs under their purview generate appropriate returns on investment, and more generally, are financially sustainable. The cabinet provides policy directives to SOEs and contributes to the design and achievement of SOE objectives. Functions may be performed by two different departments in some cases. For Eskom, for example, the Department of Public Enterprises is the shareholder while the Department of Minerals and Energy is in charge of the SOE's policy. There is no formal ownership policy for SOEs nor a periodic re-evaluation of the relevance of their objectives.

8. SOE oversight is carried out by the parliament, the executive, and SOE boards. Parliament's Standing Committee on Public Accounts reviews annual financial statements and audit reports from the Auditor General. Separate portfolio committees exercise oversight over service delivery performance of SOEs compared to their corporate plans. Within the executive, the shareholder and policy departments ensure that proper corporate governance is in place and oversee policy implementation respectively. The Finance Minister and the National Treasury are responsible for financial oversight to protect the budget and the sovereign credit rating. SOE boards of directors give strategic direction to SOEs and are fully accountable for SOE performance. The relevant shareholder departments appoint the boards of directors, ensure that they have the necessary skills to guide SOEs, and seek an appropriate mix of executive and non-executive directors. Shareholder departments are also required to sign agreements with the SOEs under their purview on key performance indicators (i.e., shareholder compacts).

9. SOEs also interact with regulators independently when applicable. Regulators focus on pricing issues, consumer protection, and the extent to which SOEs meet the standards of their specific industry.

10. The accountability mechanisms for SOEs work through the executive and the parliament. The cabinet and its shareholder departments have the authority to hold SOE boards and management accountable for their performance. The shareholder departments can dismiss SOE boards if not

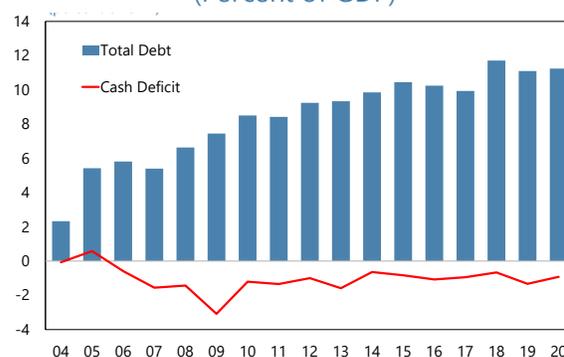
performing satisfactorily. In turn, the parliamentary committees oversee the corresponding departments and can request the implementation of remedial measures in the exercise of their oversight roles.

SOE Performance

11. The weak and deteriorating financial performance of SOEs has been mainly driven by nonfinancial SOEs.

Nonfinancial SOEs have consistently shown cash deficits in the period 2004–20, averaging about 1.1 percent of GDP per year in aggregate. As a result, nonfinancial SOE debt in 2020 reached 12.1 percent of GDP compared to only 2.3 percent in 2004. Financial SOEs contributed considerably less to debt accumulation (about 2 percentage points of GDP) given their much smaller size. Nevertheless, the Land Bank’s financial position has deteriorated in recent years as a result of decreasing loan quality, requiring budget support to shore up its finances.⁴

Figure 2. Nonfinancial Public Enterprise Debt and Deficit
(Percent of GDP)



Sources: SARB and IMF staff estimates.

12. Applying an SOE health check methodology individually to the largest nonfinancial SOEs confirms that most fully government-owned SOEs pose significant fiscal risks.⁵

This methodology consists of computing relevant indicators collected from SOEs’ financial statements data to measure their profitability (return on assets, cost recovery), solvency (debt to assets, interest coverage), and liquidity (current ratio, quick ratio), and compare these values to those that lenders and credit rating agencies consider representative of five categories of risk. A composite indicator derived from the individual indicator ratings is used to estimate the overall risk for each enterprise. Below-moderate risk scores are interpreted as financial performance being on track, moderate risk scores as a gray zone, and above-moderate risk scores as high or very high risk, pointing to the need to rectify the financial performance. The methodology was applied to 11 nonfinancial SOEs accounting for an estimated 84 percent of total nonfinancial SOE assets, using financial statements from FY15/16 through FY19/20.⁶ The main results suggest that:

- SOEs with weak financial performance had consistently poor profitability, liquidity, and solvency indicators, the latter reflected in a high level of indebtedness.

⁴ See Annex I for a list of institutions included in SARB’s non-financial SOEs data.

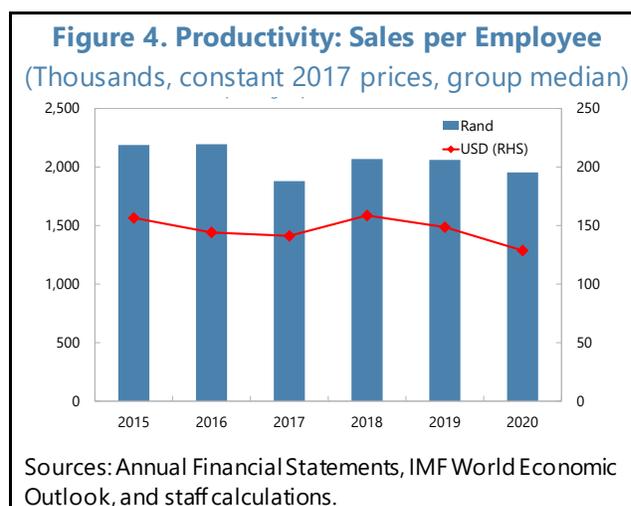
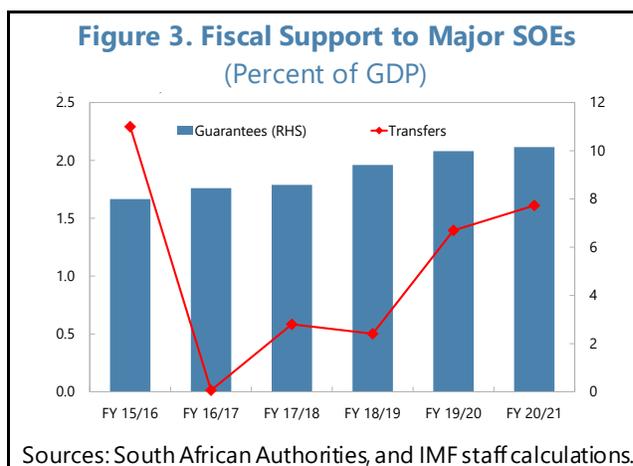
⁵ The methodology was developed by the Fiscal Affairs Department of the IMF. See the SOE Health Check User Guide (forthcoming) for a more detailed discussion.

⁶ The non-financial SOEs included are Eskom, Transnet, Telkom, ACSA, CEF, Denel, SAA, SABC, SAFCOL (the forestry company), SAPO (post office), and TCTA.

- About 70 percent of fully government-owned SOEs consistently show risk scores above moderate since FY16/17.⁷
- SOEs with partial private ownership (Telkom and ACSA) had consistently better financial indicators than the fully government-owned ones due to better performance in the areas of profitability and solvency.

13. Data on government support to major nonfinancial SOEs are consistent with the SOE health check findings. Several nonfinancial SOEs (i.e., Eskom, SAPO, SABC, Denel, and SAA) have received transfers from the budget. Moreover, Eskom, TCTA, SAA, and Transnet are also beneficiaries of government guarantees on their borrowing, with Eskom and energy-sector related guarantees accounting for 87 percent of the stock of guarantees in FY20/21. The cost to the government of direct support through transfers increased from 1 to 1.6 percent of GDP between FY15/16 and FY20/21, and the stock of government guarantees on major SOE borrowing picked up from 8 to 10.2 percent of GDP over the same period.

14. Nonfinancial SOE productivity developments also seem consistent with the weak financial performance. Per-employee sales in constant prices, a common measure of SOE productivity, had been falling before the pandemic and likely declined further in FY20/21 as the sharp pandemic-induced contraction hit. The result holds irrespective of whether sales are measured in rand or in US dollars.



C. South Africa's SOE Landscape vis-à-vis the International Perspective

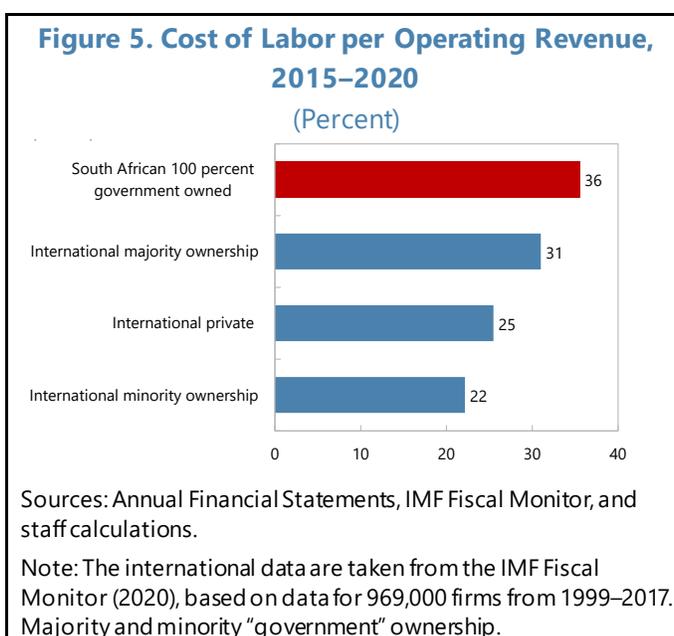
15. While major SOEs are present in similar network industries than in other EMEs, the extent of government ownership is considerably higher in South Africa. Internationally, SOEs are especially prevalent in utilities, transportation, and banking, as is the case in South Africa (Fiscal Monitor April 2020). However, 60 percent of utility companies in other EMEs have a mix of public- and

⁷ This result counts as above moderate the case of one SOE, which after having received significant government transfers in FY19/20, showed improved liquidity indicators that fiscal year.

private-sector owners. Countries like Brazil and China have taken advantage of private participation to improve incentives for efficiency in SOEs. Meanwhile, in South Africa, the largest SOEs are typically 100 percent government-owned. Moreover, there are still SOEs that operate in sectors that are managed by private participants with higher productivity in other countries.

16. Unlike in other EMEs where government ownership of commercial banks is more prevalent, financial SOEs in South Africa focus exclusively on developmental objectives. Financial SOEs are modest in size compared to the banking system (4 percent of banking system assets) and they do not take deposits from the public. This is a relative strength compared to other EMEs given that government ownership of commercial banks internationally has proven to be a major source of financial sector fragility and contingent liabilities.

17. Consistent with the higher extent of government ownership, the cost of labor compares unfavorably with that of international counterparts. The average cost of labor (as a share of total operating revenues) is somewhat higher in the fully government-owned nonfinancial SOEs in South Africa than in the majority government-owned entities internationally.⁸ Among nonfinancial South African SOEs, in the two institutions with minority private shareholders, labor costs are considerably lower than in the fully government-owned ones—consistent with findings at the international level that private participation in SOE operations increases their efficiency. The latter result, however, needs to be interpreted with caution given the small number of SOEs with private participation in South Africa.



18. SOEs in South Africa face similar challenges than in other EMEs. The 2012 Presidential Committee Report on State Owned Entities (PCRSOE) extensively documented these challenges, which include lack of clarity in objectives, multiplicity of mandates within their business models, improper costing of mandates, and weaknesses in governance and oversight. These weaknesses have contributed to the feeble financial health of SOEs. Furthermore, the use of bailouts to prop up SOE finances and guarantees to help them borrow, in the absence of sufficient assurance that appropriate restructuring and efficiency improvements will take place, have undermined SOEs’ incentives to improve their performance. SOE finances and service delivery have largely failed to improve, as exemplified by the continued deterioration in Eskom’s finances and energy availability in recent years.

⁸ Using data from the April 2020 Fiscal Monitor.

19. Weaknesses in the institutional framework discussed in the PCR SOE include:

- **Lack of an ownership policy.** The proliferation of SOEs reflects historical developments more than a planned long-term vision that links ownership to a development plan. As such, misalignments of SOEs' performance with goals and needs are not subject to review. Moreover, establishing new SOEs is a simple process—SOEs can be created by all levels of government with no deep comparative analyses on appropriateness and cost-effectiveness compared to other means of addressing market failures or reaching non-economic objectives.
- **Inconsistent legislative framework.** Legislation is dispersed among many laws and lacks uniformity. Important elements may contradict each other in different pieces of legislation (EL, CA, PFMA), including governance arrangements and reporting lines. For example, there are differences between who appoints CEOs and SOE boards, who sets remuneration policies, who is responsible for checks and balances, and what the reporting obligations are, which creates uncertainty, complicates enforcement, and increases the burden of compliance for SOEs. Lack of enforcement of PFMA provisions has also been a longstanding problem.
- **Complex and decentralized oversight model.** Given the lack of clarity in the definition of roles, conflicts among different oversight entities may arise, weakening accountability. For example, the National Treasury should have the tools to ensure that a policy ministry does not pursue an SOE policy that is financially unaffordable or creates large fiscal risks. Recent developments around SAA illustrate these issues and the need for greater coordination among entities.
- **Deficiencies in the regulatory framework.** Regulatory uncertainty, limited review of new capital projects, frequent changes in assessment methodologies, and insufficient independence of key decisionmakers are all factors that weaken SOE performance. For instance, if non-viable projects are imposed on SOEs, large but politically unfeasible increases in tariffs will be needed, financing costs will increase reflecting market risks, and the need for government guarantees will be higher.

D. International Experience with SOE Reforms

20. International experience in addressing the abovementioned challenges can help provide options for reform. Given that several EMEs have faced difficulties with SOEs, a variety of approaches have been used. A survey of SOE reform experiences indicates that reform success has critically depended on the ability to change the incentives underlying the inefficiency of SOEs. The discussion of country cases in World Bank (1995), OECD (2015), and World Bank (2020) suggests that a combination of reforms in the following areas have contributed to successful experiences:

- **A favorable political economy environment.** Three attributes seem to be needed: (1) reform must be politically desirable to the leadership and its constituencies—normally achieved after a change in government that weakens the influence of the potential losers or when an economic crisis makes the budgetary burden unaffordable; (2) political leaders act in

coordination (legislatures, executive, state or provincial governments) and have the means to implement change, withstand opposition, and compensate losers; and (3) reform announcements are credible to investors and all stakeholders.⁹

- **Conditions for increased competition.** Markets where SOEs operate need to be sufficiently competitive to encourage company managers to be efficient. To this end, some EMEs have, for instance, liberalized trade (e.g., by reducing tariffs and non-tariff barriers), removed barriers to entry and leveled the playing field (e.g., by removing specific SOE advantages, such as special tax treatments, superior regulatory treatment, and preferential procurement arrangements to attract private participants), and unbundled large SOEs to separate the parts of the business that could operate in a competitive market from those that could not.
- **Increased private-sector participation.** Some countries have promoted the entry of private capital either by broadening the ownership structure or by using management contracts to hire private-sector managerial expertise in open and transparent competitive processes. Broadened ownership occurred either by retaining majority shareholding with corporate governance reforms (e.g., Brazil, China, India, Poland), maintaining minority shareholding after a sale of the majority to the private sector (e.g., Brazil, Poland, Spain, UK, Norway), or fully divesting companies (e.g., Argentina, Brazil, New Zealand). Also, the more competitive or potentially competitive the market, the more countries broadened ownership to benefit from the efficiency advantages of private firms in such markets.
- **Hardened budget constraints.** In successful reforms, the use of explicit or implicit subsidies/transfers/bailouts was significantly reduced or eliminated; SOE borrowing was increasingly made on commercial terms; guarantee frameworks were tightened to reduce SOE reliance on them to borrow; and “soft loans” from the domestic financial sector were no longer available.¹⁰
- **Strengthened regulation.** Appropriate regulation needs to provide incentives for companies to invest, expand services, and operate efficiently while protecting consumers from market power. This has been achieved in some EMEs by: (1) auctioning off the right to be a monopoly in a competitive process or increasing competition by splitting companies into regional monopolies; and (2) setting rewards and penalties through the regulatory framework to induce the companies to operate efficiently and pass on gains to consumers through lower prices.¹¹ Safeguards to protect private producers from government opportunistic behavior were also introduced.

⁹ Three factors helped build credibility (1) a history of announcing and implementing reforms; (2) domestic commitment mechanisms, such as difficult-to-remove constitutional restrictions on overturning legislation; (3) participation in international agreements or treaties that imply adverse consequences for the government from reversing reforms.

¹⁰ Financial sector reforms included strengthened supervision and regulation, relaxation of controls over interest rates, and reduction of directed credit.

¹¹ Splitting national monopolies into regional monopolies and allowing companies to bid for that right allow to assess the performance of different firms in providing services and then not renew rights for those that are less efficient.

- **Collaboration between the government and SOE Managers.** SOEs' response to appropriate incentives ultimately depends on whether SOE managers have the freedom, means, and accountability to improve performance. SOE managers need to be able to adjust staff levels, seek cheaper suppliers, discontinue loss-making activities, and look for new markets. Their performance must be evaluated through a system of rewards (and penalties) directly linked to their success (or failure) in meeting well-defined objectives. Improving relations between the government and SOE managers necessitate the creation of new centralized ownership and oversight bodies; increased managerial autonomy to limit politicization with expanded powers for SOE managers on pricing, procurement, production, and personnel decisions; performance agreements; and upgrades in the composition of SOE boards to make them more professional and/or include representatives of consumers.¹² Financial controls on borrowing and guarantee approvals should be retained to limit fiscal risks.

21. Reforms were often implemented in stages over many years depending on country-specific circumstances and initial conditions. Given the importance of a favorable political economy to implement a critical mass of reforms, reforms were implemented in stages as country-specific conditions allowed. For example, SOE reforms in China started in the 1970s, gradually increasing private participation in the economy from what was originally a soviet-style system. Brazil experimented with different reform models since the 1980s debt crisis. In both cases reforms are ongoing.

E. Policy Options

22. Establishment of SOEs is just one policy instrument to address market failures or achieve non-economic objectives. As Shleifer (1998) suggests, the case to justify intervention through an SOE for many of the usually mentioned purposes is hard to make from stated principles, such as addressing market failures or achieving non-economic objectives. In practice, the creation of SOEs can have serious unintended consequences, including inefficient production, facilitation of political patronage and corruption, and a high fiscal cost.

23. Various policies can be deployed to improve the efficiency of SOE operations to boost growth and reduce fiscal risks. These include:

- **Undertaking a comprehensive SOE inventory.** Taking stock of the existing SOEs in all levels of the government (including subnational SOEs and SOE subsidiaries) in terms of their commercial viability, relevance of their objectives from a public policy perspective, performance, and success in dealing with market failures and achieving non-commercial objectives would not only inform subsequent reform strategy decisions but also help fill in current information gaps.

¹² Reforms to limit politicization included increasing professional qualifications and strengthening rules against conflicts of interest (Germany, Italy, Singapore, Spain), reducing board sizes (Korea, France, Poland, Spain), and the introduction of guidelines for remuneration and employment that apply across the SOEs (Czech Republic, Finland, Norway, Sweden).

- **Devising a reform strategy for each SOE.** As discussed in Alves (2016), options include: (i) transformation into government agencies or budgetary institutions if SOEs are not commercially viable but carry out relevant public policy objectives; (ii) divestment if they are commercially viable but their objectives are not relevant from a public policy perspective; (iii) liquidation if they are not commercially viable nor are their objectives relevant from a public policy perspective; (iv) retention of them as SOEs if they are both commercially viable and have relevant objectives from a public policy perspective, while pursuing reforms to improve their performance. Deciding on the course of action for each SOE and concentrating on a more focused subset of entities that will be kept as such would help upgrade companies' management and performance, improve consumer satisfaction, reduce fiscal costs, and make better use of scarce monitoring and oversight resources.
- **Addressing weaknesses in the institutional framework.** This could be achieved by (i) developing, publishing, and periodically reviewing a comprehensive ownership policy (as in France, Finland, Norway, Sweden, and the U.K)¹³; (ii) standardizing the legislative framework across SOEs to eliminate legal uncertainty, strengthen enforcement, and implement increased disclosure and reporting requirements (as in Cyprus, Korea, New Zealand, and the Philippines)^{14,15}; and (iii) simplifying the oversight model by increasing centralization of the ownership function (as in China, Denmark, Finland, France, Netherlands, Peru, and Singapore) preferably in the Ministry of Finance or a holding/investment company to unify SOE guidelines and their interpretation, compile, and report aggregate information and make the most of scarce expertise.
- **Reforming SOEs that are retained to improve their functionality.** As learned from international experience, successful reform includes (i) increasing competition in the markets where SOEs operate; (ii) broadening the ownership structure to include private sector participation; (iii) hardening budget constraints; (iv) reducing regulatory uncertainty while ensuring that price regulation provides appropriate incentives for companies; and (v) making the relationship between the government and SOE managers more collaborative.

¹³An ownership policy states the government's policy and financial objectives, defines performance indicators for each company or group of companies, and lays out the organization of the ownership function and the governance principles.

¹⁴ An SOE law could define the roles and responsibilities of key players (Ministry of Finance, line ministries, and SOE boards), introduce clear requirements for the creation/winding down and sale of SOEs, tighten sanctions for non-compliance with SOE legislation, and set standardized disclosure and reporting requirements.

¹⁵ These requirements could include: (i) enforcement of international accounting and auditing standards and timeliness of accounts; (ii) publication of key financial and non-financial performance indicators for increased public scrutiny; (iii) quantification and disclosure of the cost of quasi-fiscal operations compared to budget compensation; and (iv) production and disclosure of consolidated information regarding the SOE sector in an annual report to be able to ascertain more clearly the impact of SOE policies on the macroeconomy and the public finances.

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Annex I. Non-Financial State-Owned Enterprises Covered by SARB Data

	Sector	Entity
1	Utilities	Eskom
2		Overberg Water
3		Rand Water
4		Transcadedon Tunnel Authority (TCTA)
5		Umgeni Water
6		Sedibeng Water
7		Lepelle Northern Water
8		Magalies Water
9		Mhlathuze Water
10		Amatola Water
11		Bloem Water
12	Transportation	Transnet Limited
13		Airports Company of South Africa Limited (ACSA)
14		Passenger Rail South Africa (PRASA) - SA Rail Commuter Corporation Ltd
15		South African Airways (Pty) Limited (SAA)
16		Air Traffic and Navigation Services Company Limited (ATNS)
17		South African Express (Pty) Limited
18		Communications
19	South African Broadcasting Corporation Limited (SABC)	
20	Sentech Limited	
21	Broadband Infrastructure Company Limited (Infraco)	
22	Energy	Central Energy Fund
23		Petroleum, Oil and Gas Corporation of South Africa Pty Limited (Petro SA)
24		South African Nuclear Energy Corporation Limited (Necsa)
25	Mining	State Diamond Trader
26		African Exploration Mining and Finance Corporation SOC Ltd (AEMFC)
27		Council for Mineral Technology (Mintek)
28		Alexander Bay Development Corporation (Alexkor)
29	Others	South African Post Office Limited (Sapo)
30		South African Forestry Company Limited (SAFCOL)
31		Denel Pty Limited
32		Council for Scientific and Industrial Research (CSIR)
33		North West Development Corporation (SOC) Ltd (NWDC)
34		South African Bureau of Standards (SABS)
35		Free State Development Corporation (FDC)
36		Onderstepoort Biological Products Limited

Note: The SOEs are ordered by asset values in each sector.

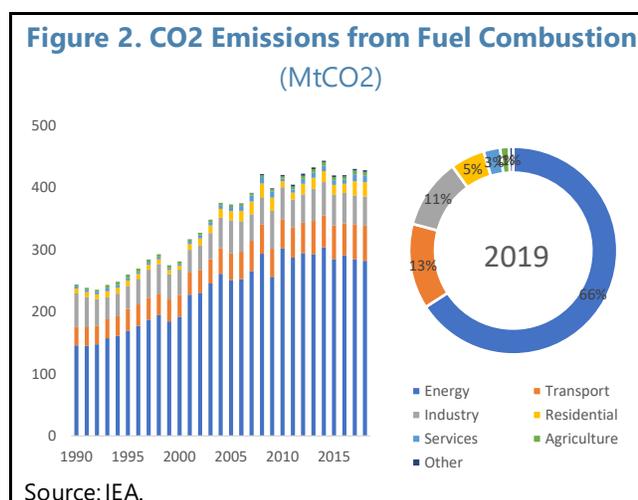
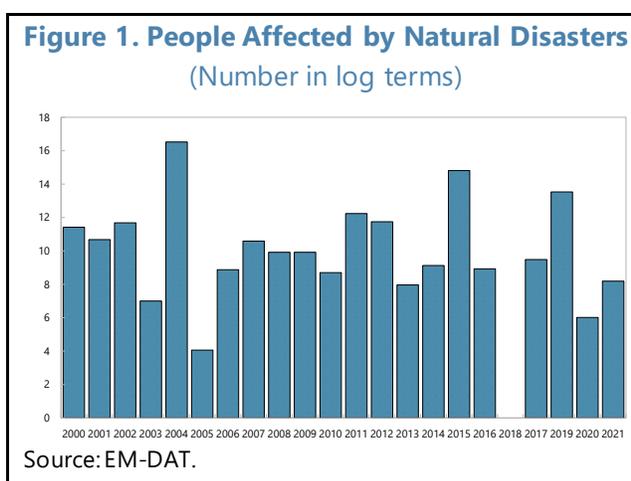
HOW CAN STRUCTURAL REFORMS SUPPORT THE CLIMATE AMBITION OF SOUTH AFRICA?¹

Climate risk is material for South Africa and the government's decarbonization goal is commendable. There are many opportunities to pursue a green recovery, but there are also deep structural constraints. As such, the climate ambition faces challenges and is further complicated by the impact of the COVID-19 pandemic. Success in moving toward a green and climate-resilient economy crucially hinges on reforms to tackle the structural rigidities in the economy to allow for dynamic product and labor markets and strong institutional credibility that would minimize the costs of the transition.

A. Addressing Climate Change

1. South Africa faces significant climate challenges. Over the past decade, over 3.8 million South Africans were affected by natural disasters, such as droughts, floods, and storms (Figure 1). According to [the Intergovernmental Panel on Climate Change](#), the increased extreme heat stress trend in the region is likely to continue accompanied by increased aridity and droughts; the intensity and frequency of heavy precipitation will likely increase; and coastal and ocean-related hazards in the region will climb with continued relative sea-level rise, contributing to increased coastal flooding in low-lying areas. Accompanied by the global warming trend, the increase in frequency and severity of these events poses challenges to the economy, including via their impact on water and food security, health, and infrastructure (DEA, 2013).

2. Moreover, the South African economy is extremely carbon-intensive due to its high dependence on coal. Emissions from fuel combustion account for over 70 percent of total greenhouse gas

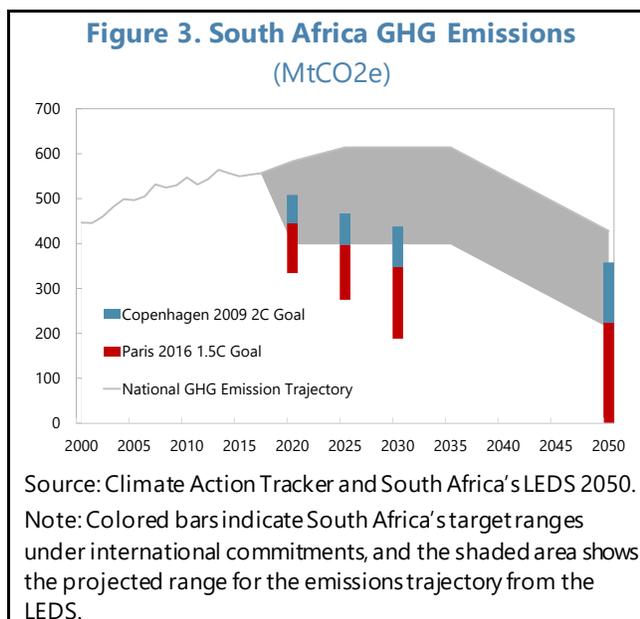


¹ Prepared by Haonan Qu (AFR).

(GHG) emissions in South Africa, and the energy sector is the largest contributor (Figure 2).² Over 90 percent of the electricity generation comes from coal-fueled plants, and coal also contributes to a significant proportion of the country's exports. The geographic concentration of coal exposure makes the need for a green transition even more challenging. Specifically, the Mpumalanga region, which is the center of coal mining and hosts most of Eskom's power plants, has many activities linked to the coal value chain. These include the coal-to-liquids operations at Secunda, which is the largest single-source site of CO₂ emissions in the world.

3. A climate policy framework is in place to strengthen the country's climate resilience and facilitate decarbonization of the economy.

After signing the Paris Agreement on Climate Change in 2016, South Africa has developed its Low Emission Development Strategy (LEDS), which is based on three key policy documents: the National Development Plan, the National Climate Change Response Policy, and the forthcoming Climate Change Bill. The recently established Presidential Climate Commission is tasked with advising on climate policies and overseeing a just transition toward a climate-resilient and low-carbon economy. The authorities also started working on the implications of the climate policy on the financial sector, including the preparatory work on the supervision of climate-related risks and taxonomy of green finance. The climate commitment and efforts



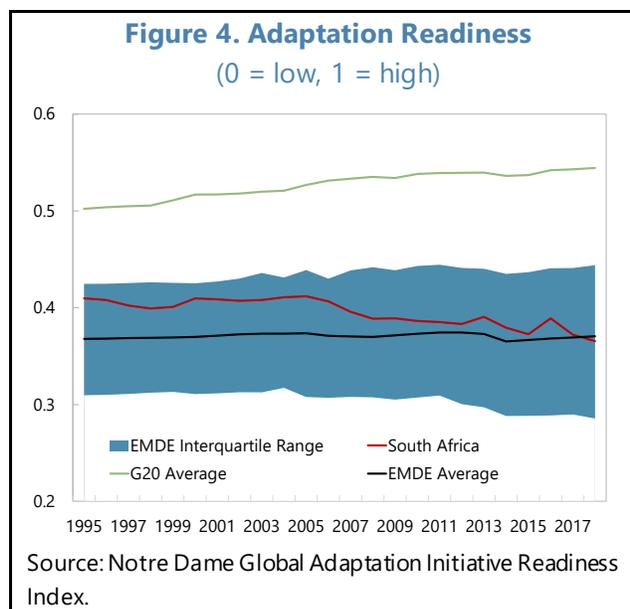
were well received by the international community as evidenced by the financial support pledged at the COP26 climate summit.

4. Nevertheless, meeting South Africa's climate goals will be challenging. The projected GHG emissions trajectory appears high compared to the targets consistent with the Paris Agreement's 1.5°C temperature limit (Figure 3), although the South African government recently announced a significant reduction of the 2030 emissions target in its updated Nationally Determined Contribution (NDC).³ The new carbon tax, which was introduced in June 2019, came into force only in October 2020. South Africa was ranked 110 out of 115 countries by the World Economic Forum on the performance of their energy systems and readiness for the transition to a

² Other GHG emissions include fugitive emissions, methane, and nitrous oxide from sectors such as agriculture, waste, and industrial processes, etc. The energy sector consists of electricity and heat production (about 80 percent) and other energy-producing industries, such as oil refineries and extraction of fossil fuels (20 percent).

³ In preparation for the United Nations climate conference in November, the South African government [announced](#) its updated NDC for submission to the United Nations Framework Convention on Climate Change in which the 2030 mitigation target range is revised from 398–614 Mt CO₂e to a range of 350–420 Mt CO₂e.

secure, sustainable, affordable, and reliable energy future (WEF, 2021). The country's ability to adapt to the adverse effects of climate change has been lagging the G20 average with a widening gap in recent years according to the ND-GAIN index (Figure 4).⁴ Several barriers to the adoption of a climate change technology have been identified, including uncertainty and lack of policy and regulatory clarity, insufficient knowledge, and information deficiencies, limited private-sector investment, high costs, and social resistance. There is also a need to build capacity for monitoring and assessing climate policies and conducting integrative and systematic climate research (DEFF, 2020).



B. Impact of the Pandemic

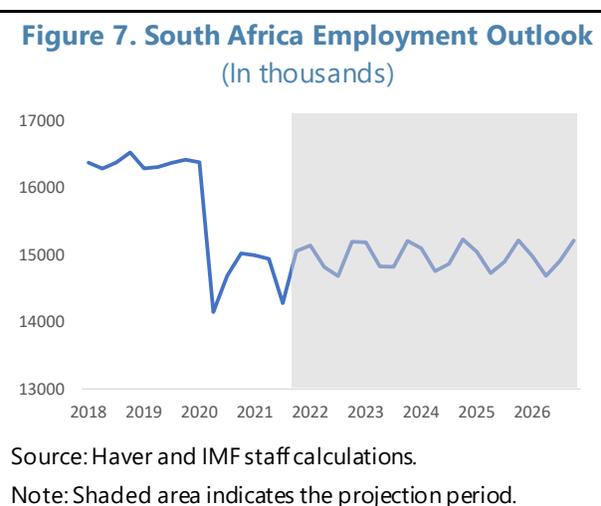
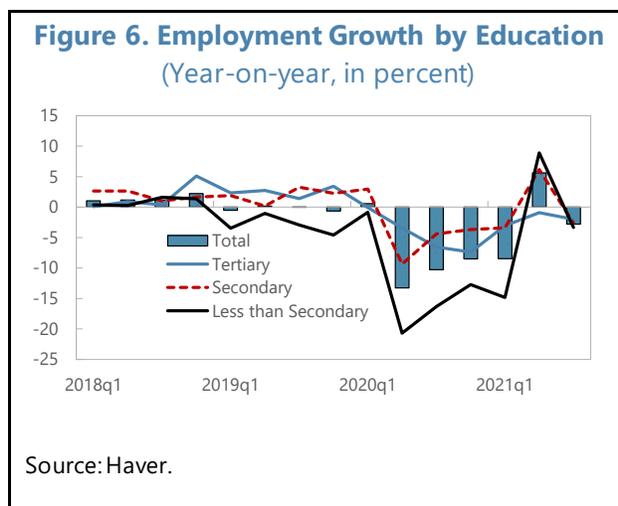
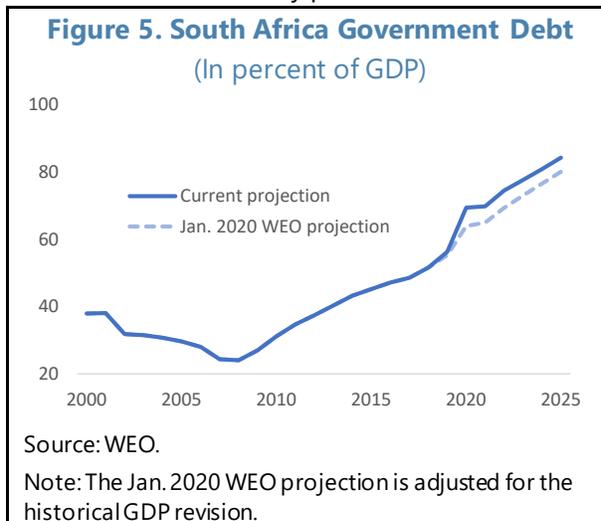
5. The pandemic has had a significant impact on the carbon-intensive sectors and the coal-dependent region. The COVID-19 pandemic hit South Africa hard. Economic activity declined significantly due to its impact on health and the demand contraction that followed the stringent containment measures. The economy is recovering following a significant output contraction (6.4 percent) and employment losses (8.5 percent) in 2020, with a high degree of heterogeneity across sectors. The energy-intensive sector experienced declines in output and employment of 13.3 percent and 7.9 percent respectively.⁵ The mining sector, of which coal mining accounts for about 19 percent of sectoral employment (Minerals Council South Africa, 2020), shrank by 11.9 percent in output and 10.7 percent in employment. In the coal-dependent Mpumalanga province, employment dropped by 7.7 percent, of which about 1.5 percentage points reflected job losses in the mining sector. As a result of the economic slowdown, it is estimated that emissions in 2020 may have fallen by 9 to 11 percent from the 2019 level, and the pandemic may further reduce South Africa's emissions level by 8 to 10 percent by 2030 below the Climate Action Tracker's pre-COVID projections.

6. The pandemic has also made the climate adaptation and decarbonization transition more challenging in several ways:

⁴ The readiness component of the Index created by the Notre Dame Global Adaptation Initiative (ND-GAIN) encompasses social economic and governance indicators to assess a country's readiness to deploy private and public investments in aid of adaptation. The index ranges from 0 (low readiness) to 1 (high readiness).

⁵ The energy-intensive sector is loosely defined as the electricity, water, gas, transport, storage, and communications sectors.

- Public finance constraints.** Public debt was on the rise years before the pandemic and jumped to nearly 70 percent of GDP in 2020 as the government deployed a policy package to mitigate the impact (Figure 5). With these expenses and difficulties to rein in less-efficient budgetary spending (e.g., SOE transfers), the room for active government support of the climate adaptation and decarbonization transition is constrained by public debt sustainability risks. At the same time, many SOEs are highly exposed to carbon-intensive activities, such as coal-fired power plants, and rail and port infrastructure for fossil fuel transportation, which makes them vulnerable to a drop in demand from the decarbonization transition with potentially significant fiscal implications.
- Labor market characteristics.** In the face of a dysfunctional labor market and very high income inequality (a Gini coefficient of 63), South Africa’s unemployment rate rose steadily, reaching nearly 30 percent by end-2019.⁶ The pandemic exacerbated the issue, as close to 1.4 million jobs were lost in net terms in 2020, of which two thirds were low-skilled jobs (Figure 6).⁷ More worrisome is the fact that the recovery so far has been jobless. The situation worsened with a significant drop in employment of over 4 percent during the third quarter of 2021, which partly reflects the impact of the July social unrest and looting. The cyclical rebound, albeit jobless, is proving relatively rapid, but the medium-term outlook indicates that employment could stay below pre-pandemic levels for a protracted period



⁶ The latest Gini index available is for 2014 from the World Bank’s World Development Indicators.

⁷ Low-skilled workers are defined as workers with an education level lower than secondary.

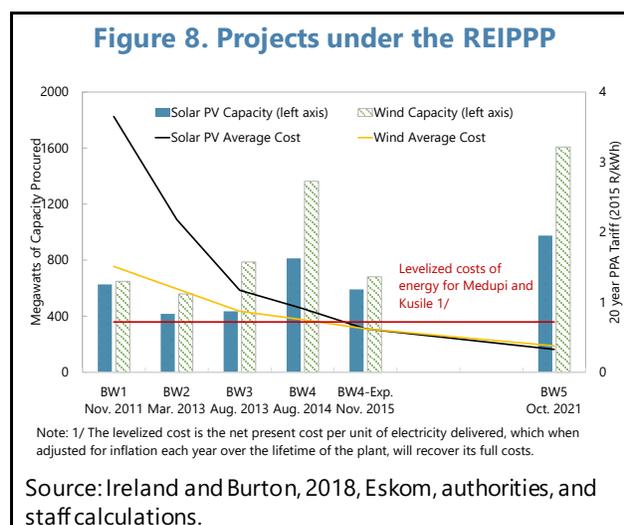
(Figure 7).⁸ Migration of typically low-skilled workers out of the coal value chain will therefore be all the more challenging. Deficiencies in the country's education system complicate further the necessary workforce transition (RES4Africa, 2020).

- *Trade-offs of the recovery plan.* The country's Economic Recovery and Reconstruction Plan considers greening the economy as one of the eight priorities in the post-pandemic recovery. The plan includes fast-tracking private-sector infrastructure investment projects and energy projects to mitigate the supply shortages from Eskom, which could turn the COVID-19 crisis into an opportunity for a green recovery. Nevertheless, the announced measures are often incompatible with a low-carbon economic rebound. For example, under the Risk Mitigation Independent Power Procurement Program (RMIPPP), the published list of preferred bidders shows that most of the 2 gigawatts of energy procured use carbon-intensive gas technology. The 20-year power procurement agreements could therefore imply high-carbon generation for a long period. Separately, the draft Mining and Energy Recovery Plan also focused on investing in the high-carbon sector, such as gas, without due concern for low-carbon technologies (e.g., any requirements for low-carbon technologies in new infrastructure investment).⁹

C. Advancing Structural Reforms in Support of the Climate Objectives

7. Advancing structural reforms is crucial to overcome the challenges and obstacles to South Africa's climate goals.

Success in achieving South Africa's ambitious climate objectives hinges on the decarbonization of the power sector. Policy actions such as the introduction of a carbon tax and the Renewable Energy Independent Power Producer Program (REIPPP) are key elements of the transition. Reform efforts to reduce rigidities in the economy will help accelerate the process and ensure a just transition.



A Competitive Market for a Swift Renewable Energy Rollout.

8. The REIPPP added renewable energy sources to the system. Under the REIPPP, a total of about 9,500 MW of capacity was procured in several bidding rounds starting in 2011, including 2,583 MW from the latest bidding window announced in August 2021. Reflecting technological advances, the average tariff in each bidding round declined significantly over time, reaching a point

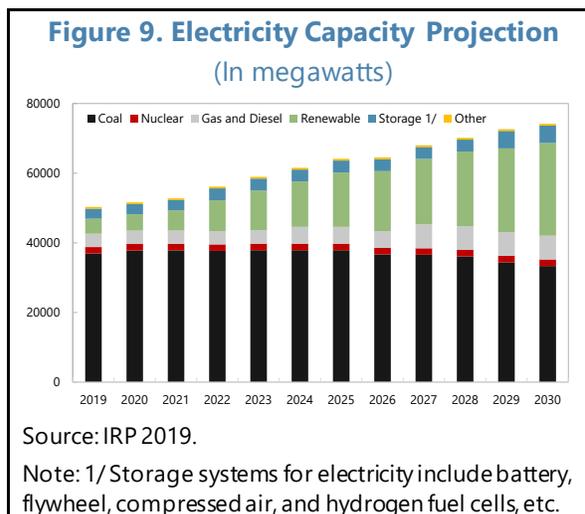
⁸ The projection is based on estimates of the Okun's law relationship between real output growth and employment growth using quarterly data for the period between 2000Q1 and 2021Q2.

⁹ See more detailed [assessment from the Climate Action Tracker](#).

where the price of renewable energy became competitive with that of energy from fossil fuel sources (Figure 8). It is worth noting that, due to grid capacity limitations, several very competitively priced projects were not selected in the latest bidding window and would otherwise have driven the average costs of the procurement even lower.

9. Despite the REIPPP's clear benefits, the rollout of renewable energy has been constrained by several factors.

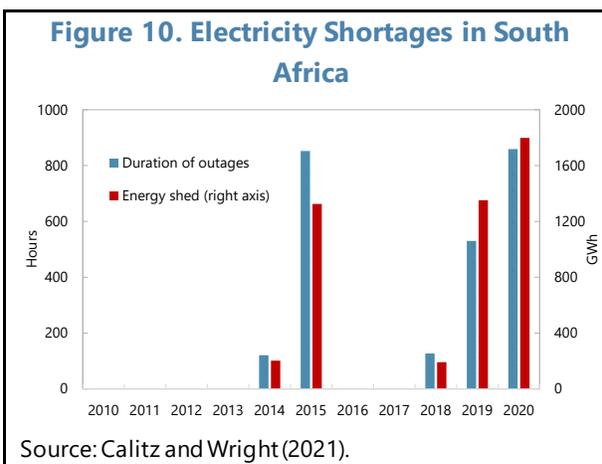
These include a lack of competition in the energy sector, a high regulatory burden, policy uncertainty, and infrastructure limitations. It took almost 6 years for the latest bidding window of the REIPPP to open. The aforementioned impediments also pose the risk of derailing the country's 2019 Integrated Resource Plan, in which renewable energy sources are expected to account for about 36 percent of total installed capacity by 2030 (Figure 9). Achieving South Africa's climate goals will be all the more challenging considering that an even higher share of renewable energy is needed to be aligned with the updated NDC. It is therefore encouraging that there are two REIPPP bidding rounds planned for 2022.



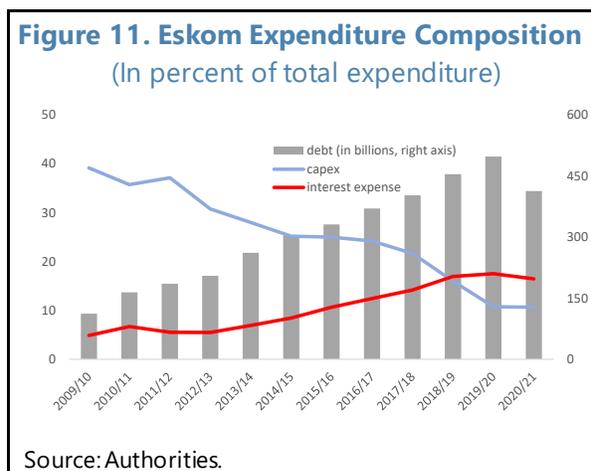
10. Efforts to enhance competition in the power sector and streamline the regulatory burden will help unlock private investment in renewable energy.

The power sector is highly concentrated and dominated by the state-owned electricity company Eskom. Entry barriers are high, with stringent licensing requirements and restrictions on third-party transactions. There have also been delays in connecting procured renewable projects to the grid (Renaud and others, 2020). Policy uncertainty, which is reflected in delays in the publication of the country's Integrated Resource Plan and the stop-start procurement of renewable energy, deters private investment in the sector.

Following the continued electricity shortages experienced by the country (Figure 10), some opening of the sector has finally taken place as amendments to the Electricity Regulation Act that lowered the licensing requirements and eased the electricity supply restrictions were introduced. Nevertheless, these amendments would greatly benefit from more clarity in some areas, such as regulations governing electricity sales and the registration process. Steadfast actions to tackle the remaining regulatory constraints and anti-competitive behaviors in the sector not only hold the key to ignite growth (e.g., Thakoor, 2020), but are also imperative for a renewable-energy-based green post-pandemic recovery.



11. Fundamental changes to Eskom are essential amid the climate change effort. The debt-ridden state-owned monopoly has become an impediment to growth, including through rising electricity tariffs and frequent power outages. The company has been relying on government support to continue with its outdated business model, which favors large-scale projects in coal and nuclear, and supports the mining value chain. As Eskom's sales fell, the company resisted new entrants into the sector, delaying the expansion of independent power producer programs. In 2017, Eskom publicly resisted providing transmission facilities to renewable projects (Makgetla, 2017). The government intervened on the regulatory front to help protect demand for Eskom's electricity.¹⁰ The financial difficulties of



the company also resulted in underinvestment in the transmission grid (Figure 11), and the performance of the transmission network deteriorated (National Treasury, 2019; Department of Public Enterprise, 2019). Efforts to improve Eskom's efficiency will help guard investment in the grid infrastructure, which is needed to integrate renewable energy sources, especially considering the limited grid capacity in the resource-rich areas of the country (Eskom, 2020). As discussed earlier, this already became a constraint to further lowering the cost of renewable energy procurement in the latest bidding window under the REIPPP. A broader strategic alignment of renewable energy procurement processes with transmission infrastructure planning would also be beneficial.

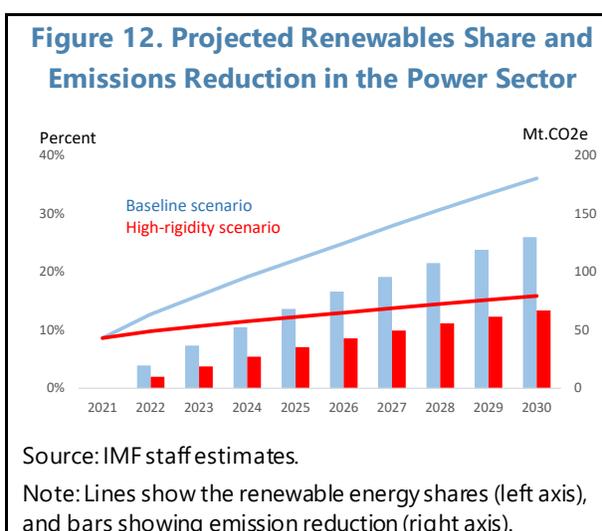
12. The greatest obstacle to the transformation of the energy sector has been insufficient reform efforts rather than lack of financing. Eskom recently announced a *Just Energy Transition Plan*, seeking concessional financing for decommissioning and repurposing its coal plants, increasing the share of renewables in the energy mix, and strengthening the grid network. Access to green finance is available to South Africa as long as the country can demonstrate a commitment to private sector-led renewable energy production and a full operational overhaul of Eskom—both focused on transforming the country's energy sector. Otherwise, meeting the financing demands of Eskom could be perceived as providing it with resources to maintain its current unsustainable and inefficient operations, and could in fact reduce incentives for green investment and financing by the private sector. An enabling regulatory environment with clear rules of the game that fosters competition and attracts private-sector participation will be key in a successful transition, with concessional financing and a reduced footprint of Eskom in the sector.

13. A competitive energy market will greatly complement other policy measures, such as carbon taxes, in decarbonizing the economy. The IMF Carbon Pricing Assessment Tool (CPAT) is

¹⁰ For instance, in 2017 the government issued a letter to businesses delaying permits for own generation to protect demand for Eskom's power (Makgetla, 2017). In 2021, the government proposed lifting the licensing threshold for small-scale power generation projects to 10 MW from 1MW, an arguably small step that falls short of industry expectations. The threshold was subsequently raised to 100MW amid the country's significant electricity shortages.

used to analyze how a competitive energy market contributes to the impact of a carbon tax on the energy mix in South Africa's power sector. The CPAT is based on a reduced-form model of energy consumption that incorporates growth forecasts, price and income elasticities, exogenous and endogenous rates of technical progress, and price changes.¹¹ While a carbon tax was introduced in June 2019, implementation did not start until late-2020 with exemptions and significant tax-free emissions allowances to ease the transition.¹² The model simulation considers a CO₂ tax progressively increasing to \$75 a ton by 2030, which is estimated to be compatible with a 2°C rise in global temperatures compared to preindustrial levels (IMF, 2019).

14. The model simulation results suggest a significantly lower level of renewable energy share in a more rigid power sector. The estimated impact on emission reduction and energy mix in the power sector are presented under two scenarios, which are differentiated in the degree of rigidities in the power sector (proxied by the generation cost elasticities). In the baseline scenario, the model uses the default parameterization of the CPAT, which approximates projections and underlying behavioral responses for fuel use and emissions generated from more disaggregated structural models. The high-rigidity scenario assumes lower own-price elasticities for generation fuels, reflecting the fact that the lack of competition and continued dominance of Eskom in the highly regulated power sector would dampen the price-responsiveness of coal use despite the rapid decline in the costs of renewable energy.¹³



The implication on the renewables shares and the emissions of the power sector as a result of the carbon taxes could be substantial as the estimates show that the share of renewable energy by 2030 under the high-rigidity scenario is less than ½ of that in the baseline scenario (Figure 12).

A Dynamic Labor Market to Absorb Displaced Workers from the Transition.

15. A profound green transition could put many jobs at risk. According to a recent study, there are 452,000 jobs in the country's coal value chain that could be affected by the transition and another 427,000 jobs in the automobile sector that could be lost due to the global shift toward electric vehicles (PwC, 2021). While more jobs are expected to be created by the renewable energy

¹¹ See Parry and others, 2018 for more details on the model.

¹² According to World Bank, 2020, the effective tax rate ranges between \$0.3–\$1.2/tCO₂e after considering tax-free allowances.

¹³ The elasticity discussed refers to own-price elasticity of generation from an energy source with respect to the generation cost. It reflects the percent reduction in the use of an energy source due to switching it to other energy sources, per one-percent increase in its generation cost. The baseline scenario uses an elasticity of 0.7 while the high-rigidity scenario has an elasticity of 0.2.

rollout, there could be significant mismatches both in terms of job location, quality, and qualification needs (Burton and others, 2019).

16. Efforts to promote labor market flexibility and build human capital will support workers displaced by the decarbonization transition and prepare the young for the future.

Bold reforms of labor market institutions in the areas of collective bargaining, employment protection legislation, and minimum wage-setting would give firms greater workforce management ability and boost employment opportunities for the inexperienced and the young. Measures to improve the quality of education, apprenticeships, and vocational training schemes would not only help tackle high structural unemployment (Duval and others, 2021, Mlachila 2019), but also support displaced workers via reskilling and upskilling. Improvements in the design of active labor market policies, particularly geographical mobility subsidies, could be effective in bridging the spatial divide between displaced workers' living areas and places where new jobs are created. These efforts become especially important considering the impact from the pandemic, particularly on the young and low-skilled as discussed earlier.

Tackling Governance Vulnerabilities to Ensure a Fair and Just Transition.

17. Accelerating governance reforms will foster trust among stakeholders, including those from affected regions, helping overcome potential social resistance against the transition.

Concerns about corruption, poor governance, and insufficient accountability and transparency can weaken institutional credibility and undermine the ability to plan, manage, and implement the climate resilience transition (National Planning Commission, 2019). Considering the profound decarbonization transformation, significant resources will be needed to support affected regions and communities so that they also benefit from being actively involved in the transition. Improved governance and institutional arrangements will foster cooperation among different ministries and levels of government, which will not only help reduce policy uncertainty but will also contribute to an efficient utilization of the resources needed for a fair and just transition.

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