FINANCIAL STABILITY REVIEW

First edition
2025

SOUTH AFRICAN RESERVE BANK

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Background to the *Financial Stability Review*

The primary mandate of the South African Reserve Bank (SARB), as stated in the Constitution of the Republic of South Africa, is to achieve and maintain price stability in the interest of balanced and sustainable economic growth in South Africa. The Financial Sector Regulation Act 9 of 2017 (FSR Act) assigns a statutory mandate to the SARB to protect and enhance financial stability in South Africa.

The SARB follows a structured framework designed to gather information and monitor developments, assess financial stability, and communicate its assessment through the *Financial Stability Review (FSR)*. Among other things, the FSR Act requires the SARB to (i) monitor and review any risks to financial stability, including the nature and extent of those risks as well as the strengths and weaknesses of the financial system; and (ii) take steps to mitigate risks to financial stability, including advising the financial sector regulators and any other organ of state of the steps that should be taken to mitigate those risks.

The FSR Act also requires the SARB to assess the stability of the South African financial system at least every six months and to communicate its assessment in the *FSR*, which is tabled in Parliament. The *FSR* provides readers with the SARB's assessment of the stability of the South African financial system. The SARB assesses financial stability as part of its ongoing operations, and its Financial Stability Committee (FSC) reviews the financial stability outlook and assessment at six meetings per year. The period under review for this edition of the *FSR* is the six months from December 2024 to May 2025, while the forecast period is until June 2026.

The *FSR* aims to inform members of Parliament, participants in the financial sector, international central bank peers, ratings agencies, international financial institutions, standard-setting bodies and academia of financial stability-related developments and the commensurate policy actions taken by the relevant authorities to protect and enhance financial stability. The *FSR* further aims to stimulate debate on pertinent issues related to financial stability in South Africa.

Executive summary

In the November 2024 *Financial Stability Review (FSR)*, the South African Reserve Bank (SARB) noted the resilience of the South African financial system despite various global and domestic shocks. The SARB also judged that the financial stability outlook had improved over the course of 2024. The assessment was supported by factors such as reduced electricity shortages, evidence of fiscal consolidation and an improved sovereign credit rating outlook, all of which bolstered sentiment. The orderly national elections and the subsequent formation of a Government of National Unity (GNU) further supported the improved financial stability outlook.

Conditions in 2025 have been more challenging. Globally, systemic risk increased during the period under review, mainly due to a surge in policy uncertainty in response to international trade conflicts. Other factors such as fears over a United States (US) recession, downward revisions to global growth projections, and new and ongoing military conflicts have added to the sense of a global poly-crisis. In turn, this has contributed to extreme market volatility globally and significant losses in some asset classes.

These global uncertainties and the implications for domestic financial stability are the focus of this edition of the *FSR*. The key risks to financial stability discussed in this edition are as follows:

i. increased geopolitical tension and policy uncertainty;

ii. rapid capital outflows amid heightened market uncertainty;

iii. critical domestic infrastructure failure;

iv. remaining on the Financial Action Task Force (FATF) greylist over the medium term;

v. deteriorating public sector debt ratios; and

vi. increased financial distress in households and small- and medium-sized enterprises (SMEs).

Despite falling outside of the six-month review period to the end of May 2025, a noteworthy development was the statement released by the FATF on 13 June 2025. The statement confirmed that South Africa had addressed or largely addressed all 22 action items agreed to as per the Action Plan following South Africa's greylisting in February 2023. The risk of South Africa remaining on the FATF greylist over the medium term has therefore reduced significantly. The South African financial system continued to function without interruption and despite heightened market volatility. Prudentially regulated domestic financial institutions remained resilient, partly owing to their ability to maintain adequate capital buffers to absorb the impact of shocks. However, downwards revisions to the domestic economic growth forecast will likely test this resilience beyond the forecast period.

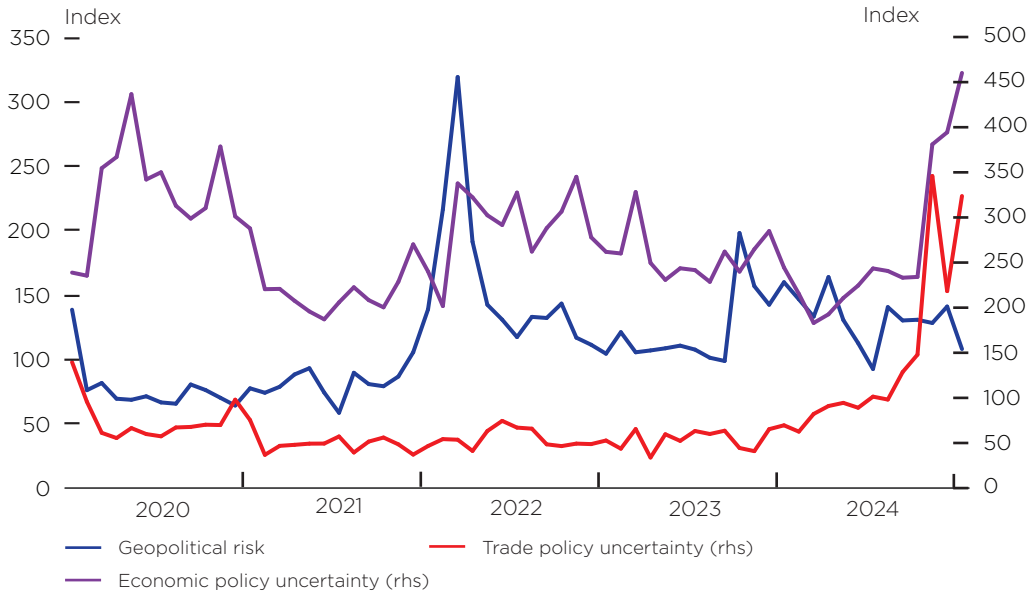
This edition of the *FSR* also includes the SARB's revised credit-to-gross domestic product (GDP) gap and a summary of the results from the 2024-2025 Climate Risk Stress Test (CRST).

Financial stability developments and outlook

Global developments and risks

Geopolitical conflicts have contributed to market volatility, and higher trade and economic policy uncertainty since the beginning of 2025 (Figure 1). Escalating trade tensions have further fuelled concerns over a slowing in, or even reversal of, globalisation. As a result, the global economy faces a potential sharp retrenchment of trade, and possibly a reversal of the benefits yielded by decades of global economic and financial integration. Financial stability could be impaired through channels including lower global growth, higher inflation and interest rates, increased risk aversion, and heightened liquidity and solvency stress for financial institutions.

Figure 1: Trade and economic policy uncertainty and geopolitical risk

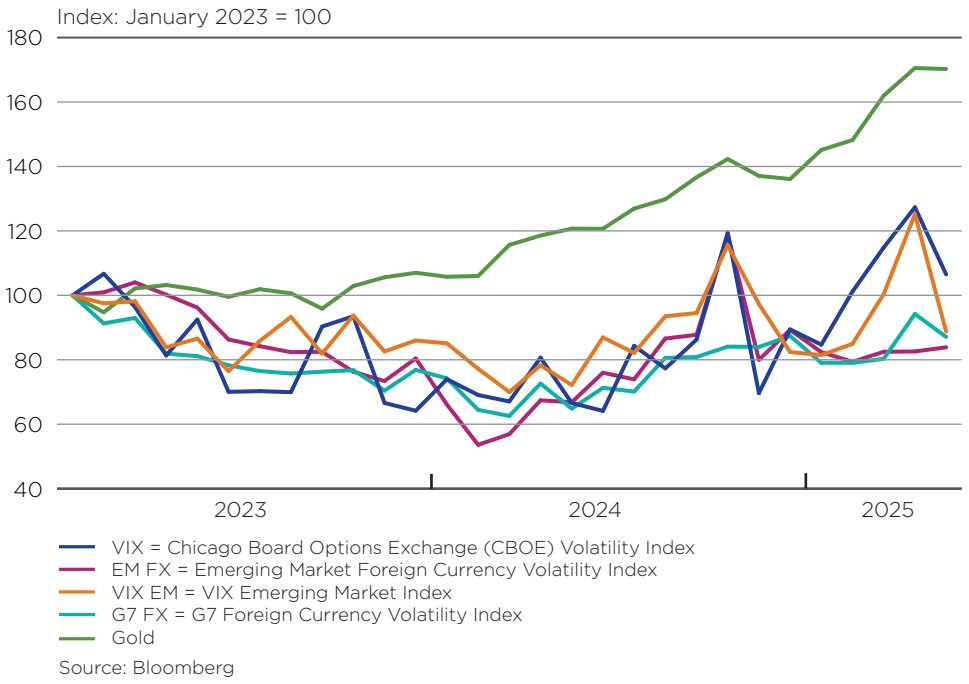


Sources: Caldara and Iacoviello (2022); Ahir, Bloom and Furceri (2022)

Geopolitical risks have broad implications for global economic stability. Geo-economic fragmentation could limit market access, not only increasing the cost but also reducing the availability of funding, hedging and diversification options. Additionally, fragmentation could hamper international cooperation on critical issues such as climate change, financial regulation and public health.

Since the release of the November 2024 *FSR*, the gold price has risen sharply, reflecting growing market uncertainty and heightened volatility (Figure 2). The price of gold increased from around US$2 600 per ounce at the start of 2025 to US$3 300 per ounce at the end of May, reaching its highest price ever of US$3 432 per ounce on 13 June 2025. This increase corresponds with significant increases in a range of market volatility indices since the start of the year.

Figure 2: Selected volatility measures relative to the gold price



Source: Bloomberg

In its latest *Global Financial Stability Report*, the International Monetary Fund (IMF) identifies three key emerging vulnerabilities.[1] These are (i) stretched asset valuations in certain key global markets; (ii) highly leveraged financial institutions exacerbating the sovereign-financial sector nexus; and (iii) market volatility and uncertainty exacerbating debt vulnerabilities for heavily indebted sovereigns.

In contrast to various other economies, asset valuations in South Africa do not appear stretched currently. South Africa is, however, vulnerable to a sharp repricing in government debt, especially in the context of risk-off swings in global financial markets.

Domestic developments and key risks to financial stability

The SARB uses a wide range of financial stability indicators that are designed to act as early-warning signals of a potential build-up of cyclical changes in the financial system that could lead to vulnerabilities if left unattended.[2] A 'snapshot' of all material developments is communicated through the financial stability heatmap (Figure 3). The heatmap visually depicts the statistical transformation of a wide range of financial stability indicators against their historical averages. It is data driven and based on historical information, and does not contain any evaluation of financial stability risks. It serves as a communication tool to flag areas for deeper analyses.[3]

1 Available at https://www.imf.org/en/Publications/GFSR/Issues/2025/04/22/global-financial-stability-report-april-2025.

2 Both Adrian et al. (2015) and Aikman et al. (2017) note that a shortcoming of the framework underpinning the monitoring of financial stability vulnerabilities and the construction of financial stability heatmaps is its focus on cyclical vulnerabilities and not structural and event vulnerabilities.

3 Refer to Annexure A for an overview of how the South African financial stability heatmap is composed, including the indicators underlying the various heatmap elements. In an effort to continually improve the reliability of the indicators used in the heatmap and to keep them relevant, they are reviewed and updated from time to time.

The heatmap is based on a z-score transformation of the underlying indicators. The transformed indicators are thereafter mapped onto an empirical cumulative distribution function (ECDF). Low values from the ECDF are mapped to green while higher values are mapped to shades of red.

Figure 3: Financial stability heatmap

*Other financial intermediaries: these include unit trusts and finance companies.

Source: SARB

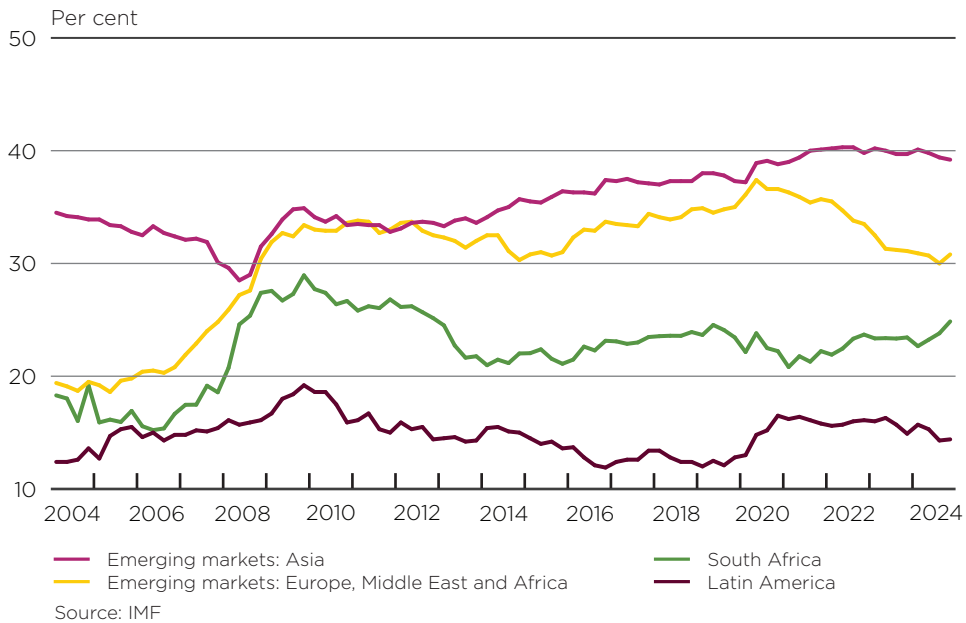
Not every indicator used in the construction of the heatmap is discussed in the *FSR*. Rather, the focus is on key global and domestic factors that may be relevant to financial stability risks and vulnerabilities in South Africa. The potential build-up of imbalances as reflected in the heatmap is discussed in detail in the write-up of the key risks and vulnerabilities identified as per the SARB Residual Vulnerability Matrix (RVM).

The SARB's financial stability heatmap highlights the build-up of financial imbalances across several macroprudential indicators. The most notable of these relate to banks' sovereign exposure, government debt and interest payments, net portfolio purchases by non-residents and financial strain in households. Indicators demonstrating resilience in the financial sector include aggregate capital and liquidity buffers exceeding the minimum regulatory requirements.

Following the national elections in May 2024, the formation of the GNU was a catalyst for a significant rally in South African assets. The South African equity market responded very positively, but South African equities were coming off a low base after a long period of underperformance compared to global equities. The re-rating of South African equities pushed the trailing price-to-earnings (P/E) ratio in June 2024 to a 3-year high before reverting closer to the 10-year average. This was largely due to the increased global market volatility and uncertainty observed since the beginning of 2025. Exposure to elevated precious metals prices has partially driven local equities' recent performance, but the underwhelming domestic economic growth outlook will likely keep valuations constrained over the short to medium term.

Compared to emerging-market peers, domestic banks' holdings of total government debt are relatively low (Figure 4).[4] By contrast, local sovereign debt holdings among domestic non-bank financial institutions are high relative to South Africa's peers (Figure 5). The SARB will continue to monitor the broader sovereign-financial sector nexus given the importance of non-bank financial institutions (NBFIs) in the domestic financial system, and the high level of interconnectedness between banks and non-banks.[5]

Figure 4: Emerging market bank holdings of total government debt

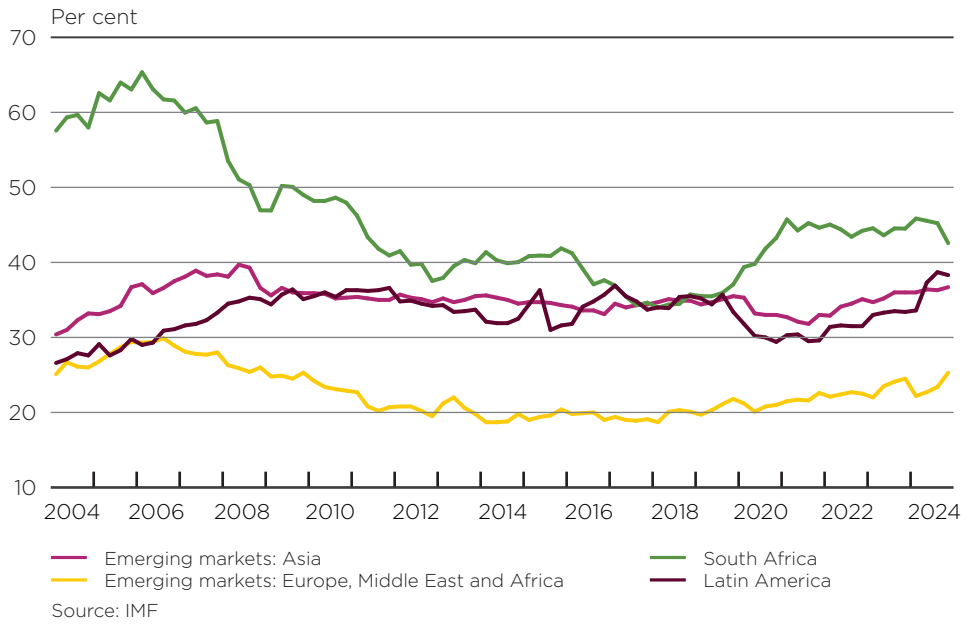


Source: IMF

4 While South African banks' overall holdings of total government debt are low, non-systemic banks' holdings are high compared to South Africa's EM peers. However, non-systemic banks account for less than 5% of South African banking sector assets. See Box 1 on page 12 of the November 2023 *FSR* for a discussion on the differences between systemic and non-systemic banks' holdings of government debt (https://www.resbank.co.za/en/home/publications/review/financial-stability-review).

5 See the IMF's 2022 Financial System Stability Assessment for a detailed assessment of interconnectedness in the South African financial system (https://www.imf.org/-/media/Files/Publications/CR/2022/English/1ZAFEA2022003.ashx).

Figure 5: Emerging market non-bank holdings of total government debt



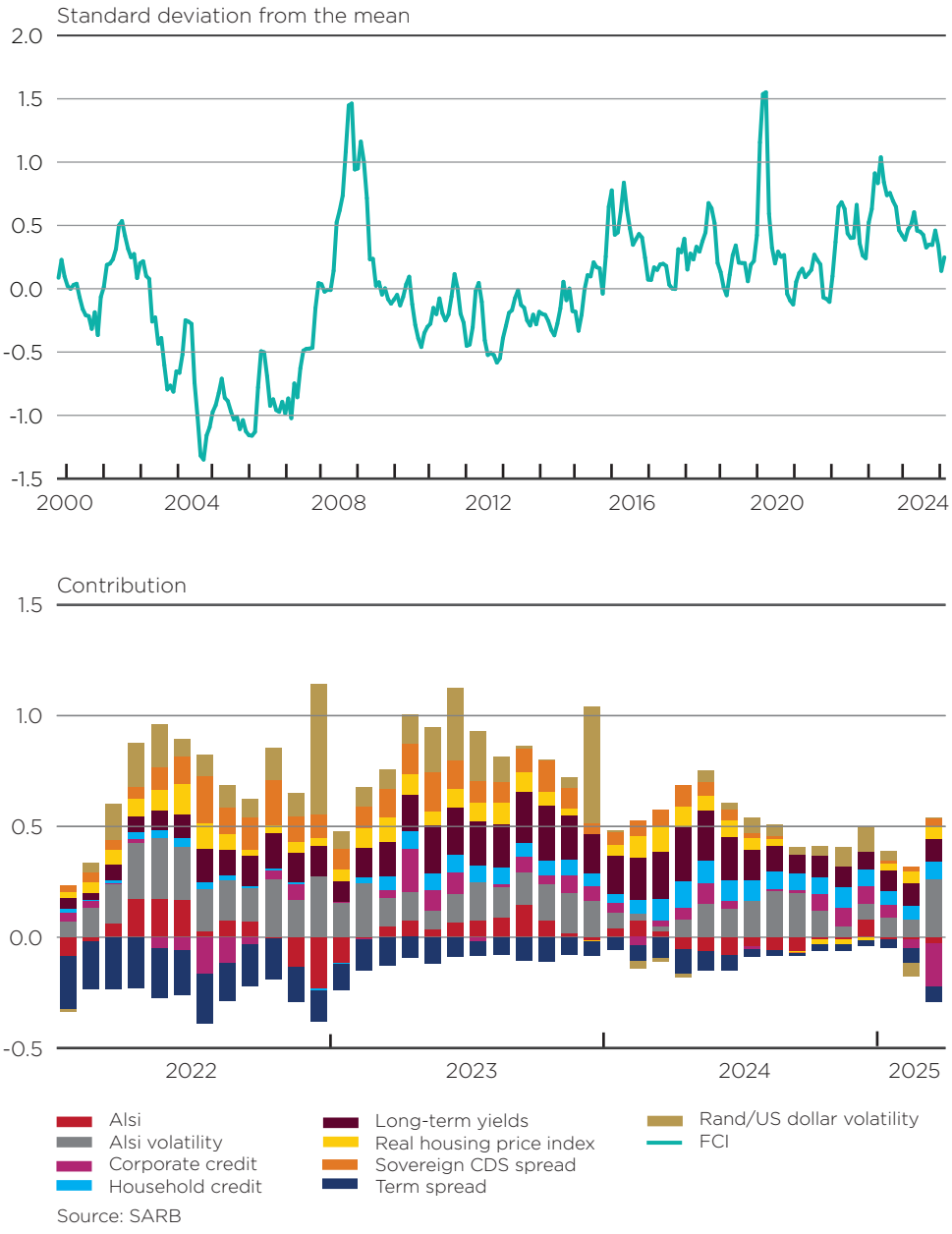
Source: IMF

In the first five months of 2025, non-residents sold R111 billion of South African equities, consistent with a broad-based retreat from emerging-market equities amid heightened risk aversion. While non-residents increased their nominal holdings of domestic bonds by R27.2 billion between December 2024 and May 2025, the share of foreign holdings of South African government bonds declined marginally from 24.6% to 24.5% during this period.

The SARB's Financial Conditions Index (FCI)[6] shows that domestic financial conditions continue to be relatively tight (Figure 6). Equity-market volatility has remained elevated since the release of the November 2024 *FSR*. Declines in credit extended to households, and higher long-term government bond yields, were the other main contributors to tighter financial conditions.

6 The methodology underlying the FCI is available at https://www.resbank.co.za/content/dam/sarb/what-we-do/financial-stability/Constructing%20a%20Financial%20Conditions%20Index%20for%20SA.pdf.

Figure 6: SARB FCI index (top) and composition (bottom)



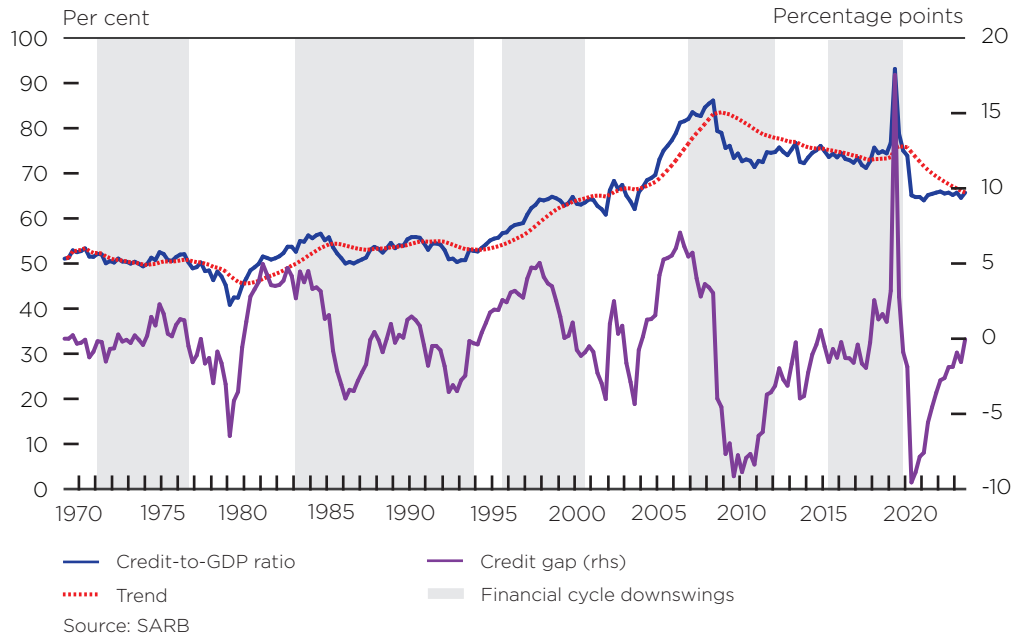
Source: SARB

This edition of the *FSR* includes the SARB's revised credit-to-GDP gap.[7] When credit grows too quickly relative to real economic activity, it can create systemic risks in the financial sector. Financial institutions tend to lend excessively during economic booms and then restrict lending during downturns, which can worsen economic recessions. To address this, the Basel Committee on Banking Supervision (BCBS) suggests using the credit-to-GDP gap as a tool to identify rising credit risk that can lead to systemic instability. When this gap exceeds certain thresholds, macroprudential policy instruments such as the countercyclical capital buffer (CCyB) can be used to build resilience in the financial system against potential downturns.

7 The credit-to-GDP gap is simply the cyclical component of the credit-to-GDP ratio and is obtained by subtracting the long-term trend component of this ratio from its actual value. The full paper, titled *The South African credit gap as real-time early warning indicator of financial imbalances*, is available at https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.resbank.co.za%2Fcontent%2Fdam%2Fsarb%2Fwhat-we-do%2Ffinancial-stability%2FTB-05%2520%2520SARB%2520Credit%2520gap%2520as%2520real-time%2520early%2520warning%2520indicator%2520of%2520financial%2520imbalances.

The credit-to-GDP gap is one of several indicators the SARB employs to monitor financial stability conditions.[8] A positive credit-to-GDP gap indicates that total credit extension relative to the size of the economy is above its long-term trend, while a negative gap suggests that credit growth is below its long-term trend. Figure 7 shows that South Africa's credit-to-GDP gap has been negative since the fourth quarter of 2020, implying that there has not been excessive credit extension over this period and is therefore not considered a vulnerability from a financial stability perspective.

Figure 7: The South African credit-to-GDP gap



Source: SARB

Quantitative indicators such as the heatmap, FCI and credit-to-GDP gap are useful for assessing cyclical risks that typically build up over long periods. However, there are also structural risks to financial stability that are not necessarily evident in quantitative indicators. The SARB's RVM contains a combination of the key cyclical and structural risks facing the domestic financial system. This edition of the *FSR* identifies the following key risks to domestic financial stability:

i. increased geopolitical tension and policy uncertainty;

ii. rapid capital outflows amid heightened market uncertainty;

iii. critical domestic infrastructure failure;

iv. remaining on the FATF greylist over the medium term;

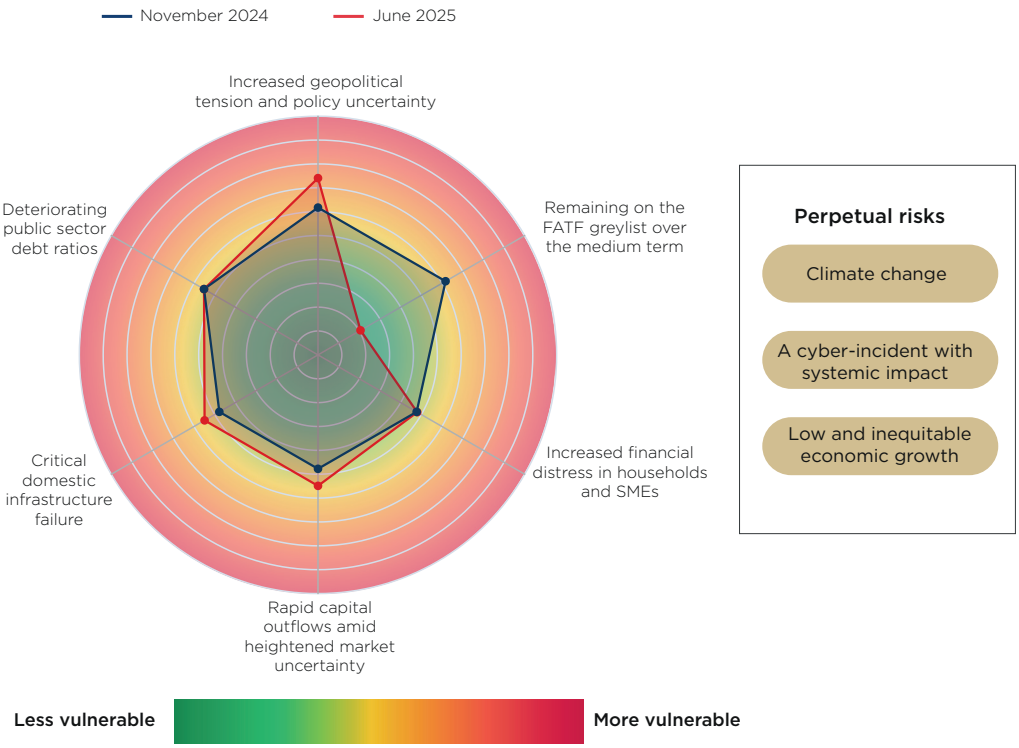
v. deteriorating public sector debt ratios; and

vi. increased financial distress in households and SMEs.

8 Other indicators include the SARB's financial stability heatmap (Figure 3), FCI, results from stress-testing exercises, research outputs, systemic risk analyses and interconnectedness measures. For more information, refer to the SARB's macroprudential policy framework and decision-making process, and its financial stability monitoring and assessment framework (available at https://www.resbank.co.za/en/home/what-we-do/financial-stability).

These risks are reflected on the SARB's RVM (Figure 8). The RVM reflects the SARB's assessment of the residual vulnerability (i.e. the remaining vulnerability after accounting for mitigating factors and actions) of the South African financial system to the identified risks. Residual vulnerability takes into account both the probability of a risk materialising within the forecast period (i.e. the next 12 months), and the effect of mitigating (or amplifying) factors that reduce (or increase) the financial system's vulnerability to these risks. The closer to the outer edge of the circle, the higher the residual vulnerability and vice versa.

Figure 8: The SARB's Residual Vulnerability Matrix



Source: SARB

Besides the temporal risks included in the RVM, the financial sector continues to operate in an environment with perpetual risks. The key perpetual risks are the impact of climate change on the financial sector, the threat of a cyber-incident with systemic impact, and persistently low and inequitable domestic economic growth. Each of these key risks is discussed in subsequent sections. Crucial to note is the possibility of these risks interacting, which could greatly amplify the impact of a shock.

Financial stability summary and assessment

Since the November 2024 *FSR*, the South African financial system's vulnerability has increased to the risks of (i) increased geopolitical tension and global policy uncertainty; (ii) rapid capital outflows amid heightened market uncertainty; and (iii) critical domestic infrastructure failure. By contrast, residual vulnerability decreased significantly against the risk of remaining on the FATF greylist over the medium term. Residual vulnerability against the risks of deteriorating public sector debt ratios, and increased financial distress in households and SMEs remains unchanged since the November 2024 *FSR*.

The SARB's assessment of the stability of the South African financial system during the period under review is that the domestic financial system continued to be resilient. This resilience is expected to be sustained over the forecast period to June 2026. The key risks to domestic financial stability and the residual vulnerability of the South African financial system to these risks are discussed next.

Increased geopolitical tension and policy uncertainty

South Africa is vulnerable to spillover effects from global policy uncertainty and geopolitical tensions. Global and domestic policy uncertainty is increased by trade-related tensions and physical conflicts. This contributes to heightened financial market volatility, which leads investors to divest from riskier assets.

On 2 April 2025 – so-called 'Liberation Day' – the US announced trade tariffs against more than 180 countries. Among other things, this led to large-scale sell-offs in global equity markets, heightening concerns over the impact on US gross domestic product (GDP) and the increased likelihood of a US recession. Domestically, the Johannesburg Stock Exchange (JSE) closed 3.4% lower on 3 April 2025 and 5.3% lower the following day, reflecting the uncertainty introduced by the unexpected and unprecedented scale of the US tariffs.

The US has several tools at its disposal to promote international alignment with its own economic and political interests. Potential actions range from reducing or stopping foreign assistance to imposing trade tariffs on goods exported to the US. In the most extreme cases, sanctions could be imposed. Such actions would again range widely in terms of focus and severity, likely starting with targeting individuals as per the US Global Magnitsky Act,[9] rather than broad-based measures.

In the case of South Africa, the likely non-renewal of the US African Growth and Opportunity Act (AGOA) and the imposition of tariffs on US-South Africa trade could increase vulnerability in the domestic financial system. The SARB's April 2025 *Monetary Policy Review (MPR)* modelled the impact of tariffs on US-South Africa trade according to three scenarios.[10] Under the first scenario, AGOA is terminated without any tariffs imposed on South African goods exported to the US, leading to a marginal reduction of 0.04% in GDP. In the second scenario, AGOA is terminated alongside the imposition of a 25% tariff on South African exports, causing a slightly larger decline in GDP by 0.23%. The third scenario assumes the termination of AGOA, a 25% tariff on exports and a 15% depreciation in the rand caused by risk premium spillovers. The projected impact is the most severe for the third scenario, decreasing GDP by 0.69%.

9 The Global Magnitsky Sanctions aim to combat corruption and human rights abuses by imposing asset freezes, travel restrictions, and restrictions on conducting business with US citizens and entities on targeted individuals and entities. The effectiveness of restrictions emanates from the global influence of the US financial system, which requires banks and other organisations globally to enforce the restrictions or risk being subjected to secondary sanctions (for more information, see https://www.sanctions.io/blog/global-magnitsky-sanctions).

10 See Box 2 of the April 2025 *MPR* (https://www.resbank.co.za/en/home/publications/review monetary-policy-review).

The SARB will continue to monitor the potential financial stability impact of the 30% tariffs imposed on selected South African exports to the US on 2 April 2025. The likely implications that a decline in GDP could have for financial stability would be by amplifying the vulnerability of the financial system to the existing risks of deteriorating public sector debt ratios, critical domestic infrastructure failure and increased financial distress in households and SMEs.

The vulnerability of the South African financial system to the risk of increased geopolitical tension and global policy uncertainty has increased since the November 2024 *FSR*. The increase is largely attributable to the observed significant impact of spillover effects to South Africa from global developments, and the limited extent to which South Africa can mitigate them.

Rapid capital outflows amid heightened market uncertainty[11]

Tighter global financial conditions, increased risk aversion and heightened macroeconomic uncertainty may lead to capital outflows. There are several channels through which capital outflows can impact the ability of South African firms – financial and non-financial – to obtain affordable funding. Capital outflows can put pressure on the exchange rate and inflation, or cause increased exchange rate volatility. A material sell-off in rand-denominated government bonds may raise government borrowing costs and undermine fiscal sustainability. Reduced foreign participation in local bond markets can lead to funding stress, increasing reliance on domestic financing sources and tightening overall liquidity conditions.

Non-resident investment is an important mitigating factor to supplement a savings rate that is insufficient to support sustainable economic growth. With a negative net national savings rate[12] of 0.5% of GDP as at the end of 2024, the majority of South African savings is absorbed by government borrowing.

Procyclical investor behaviour during periods of market stress exacerbates sell-offs and market volatility. However, South Africa's flexible exchange rate regime and credible inflation-targeting framework act as mitigants against foreign outflows. The stable domestic investor base further acts as a buffer through the demand for bonds in the event of a sell-off by foreign investors.

The entrenchment of the US dollar in the South African financial system could present a vulnerability in the form of concentration risk. Box 1 considers the extent to which the US dollar is entrenched within the South African financial system.

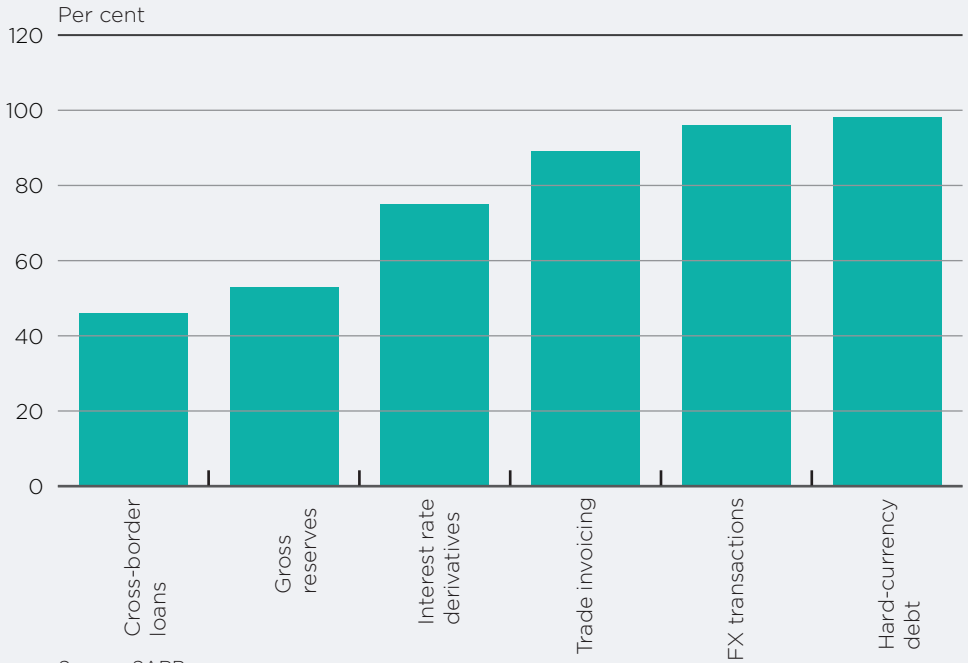
11 This risk has been discussed extensively in recent editions of the *FSR*. See Box 2 in the May 2022 *FSR* (https://www.resbank.co.za/en/home/publications/review/financial-stability-review).

12 The net savings rate is calculated as gross national savings less consumption of fixed capital or depreciation.

Box 1: The extent to which the United States dollar is entrenched within the South African financial system

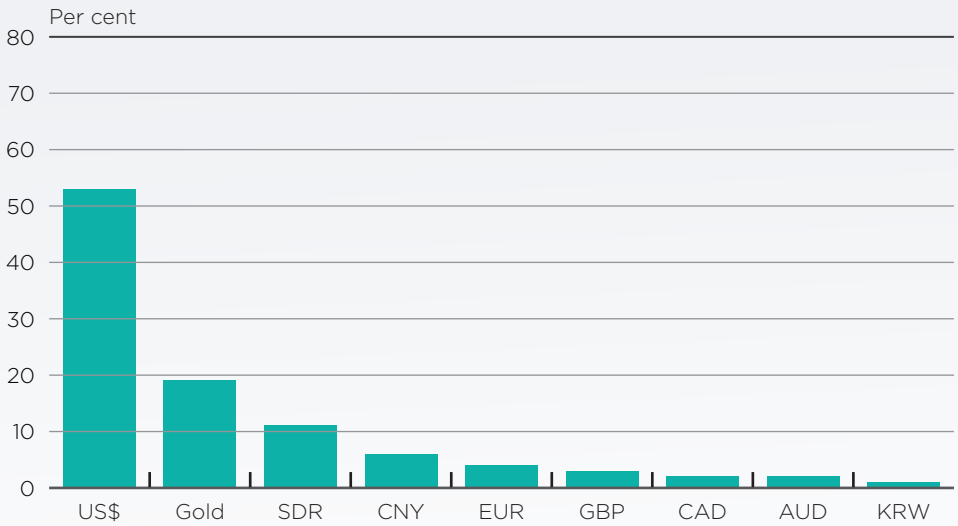
The US dollar accounts for 96% of all South African foreign-currency (FX) transactions and 98% of its foreign currency debt (Figure B1.1), while 53% of its gross reserves (Figure B1.2) are held in US dollar.

Figure B1.1: US dollar footprint in South African financial activity (US$ as percentage of total)



Source: SARB

Figure B1.2: Composition of South Africa's gross reserves*

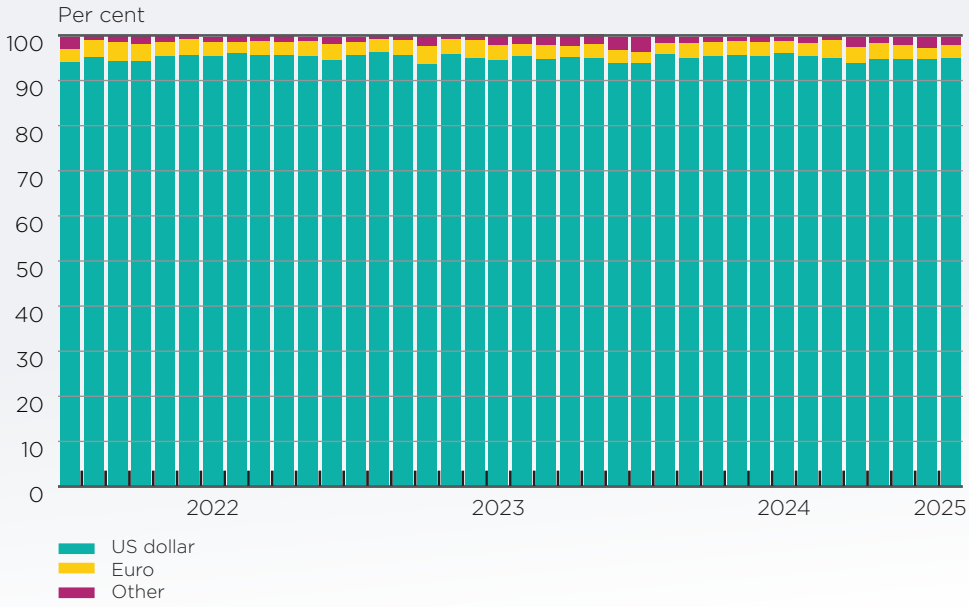


* As at 31 May 2025

Source: SARB

The US dollar consistently accounts for 93%–97% of South Africa's turnover in the South African FX market (Figure B1.3). By comparison, turnover in the next-largest currency – the euro – ranges between 2.2% and 3.9% of total FX turnover.

Figure B1.3: Domestic FX turnover by currency



Sources: Banks and SARB

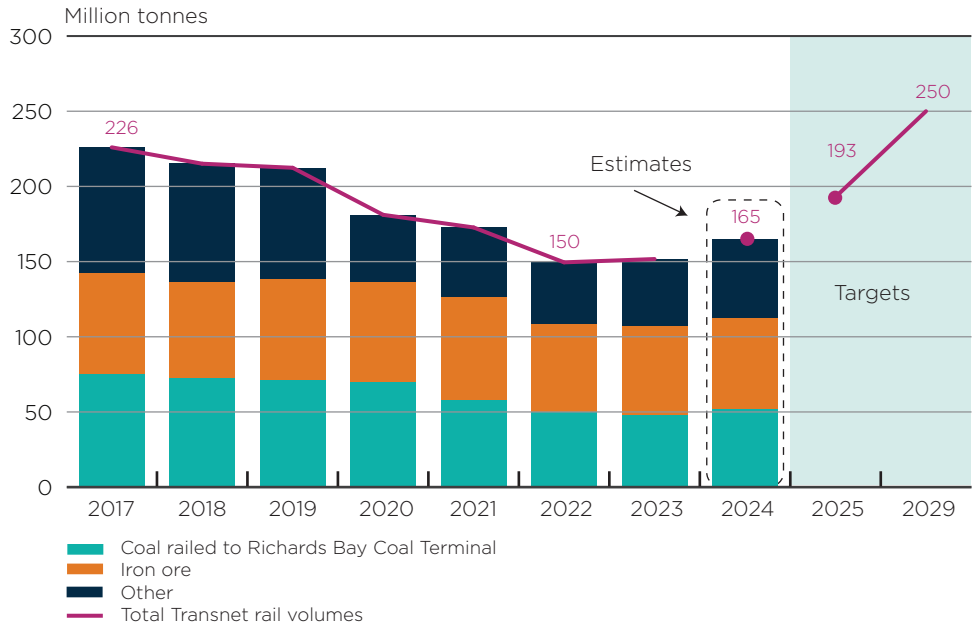
Since the November 2024 *FSR*, the South African financial system's vulnerability to the risk of rapid capital outflows has increased amid heightened market uncertainty. This increase is largely due to the exogenous nature of the risk and the limited risk mitigation impact of domestic macroprudential policies.

Critical domestic infrastructure failure

The deterioration in critical national infrastructure such as roads, railways, water and electricity has contributed to South Africa's structural challenge of low and inequitable economic growth. Critical infrastructure failure can affect financial stability through various channels. Among these is the credit channel, where either state-owned enterprises (SOEs) themselves or industries highly dependent on them become unable to service and repay debt. This could in turn contribute to a further deterioration in the fiscal position if bail-outs are required. Critical infrastructure failure also increases financial institutions' operational costs by requiring increasing levels of back-up services and contingency plans.

Rail tonnages decreased consistently between 2017 and 2022, with total Transnet rail volumes decreasing from 226 million tonnes to 150 million tonnes over this period (Figure 9). The government roadmap for allowing private train operator companies to access the national rail network should support the growth targets in 2025 and 2026.

Figure 9: Rail tonnages

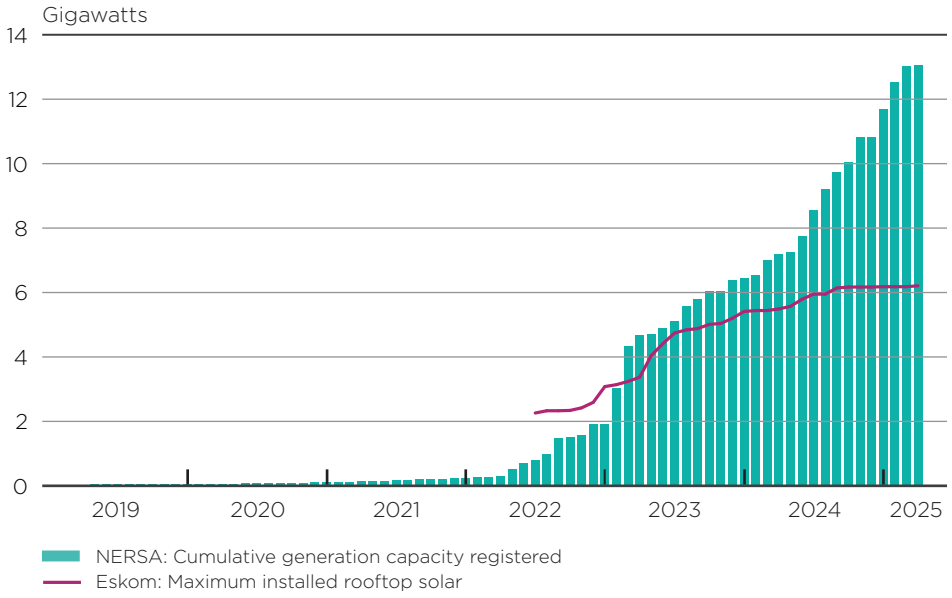


Sources: Minerals Council South Africa, Richards Bay Coal Terminal and SARS

A promising mitigant to the risk of critical infrastructure failure is phase 2 of Operation Vulindlela – a reform initiative housed in the Presidency and National Treasury. Its focus areas include reform of the local government system, the water sector and the transport sector, with emphasis on the freight logistics system. A review of the municipal funding model was formally launched in April 2025.

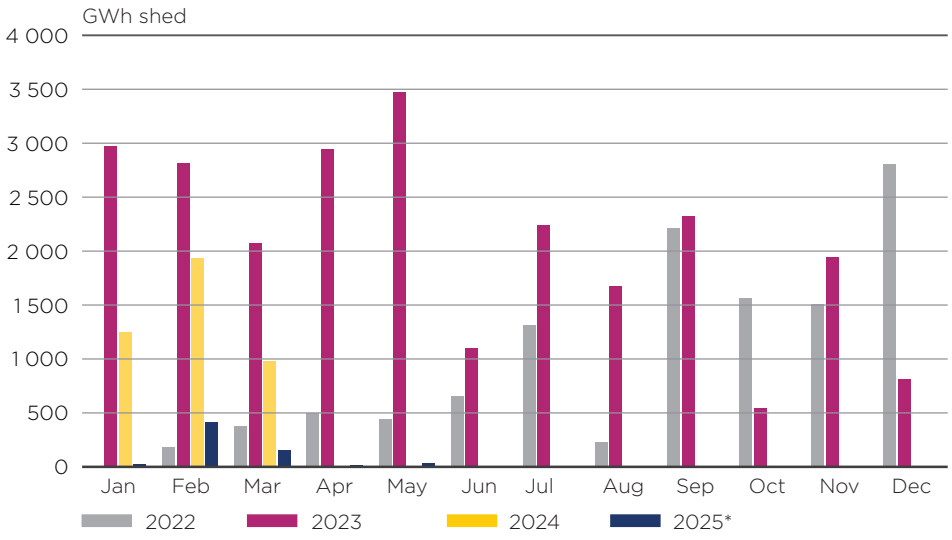
Although the financial system remains vulnerable to electricity supply-related fragilities, resilience has increased largely due to sustained growth in renewable energy generation registered and installed (Figure 10). This has alleviated pressure on the electricity grid, leading to a notable reduction in load-shedding since April 2024 (Figure 11), despite the reintroduction of moderate levels of load-shedding in the first few months of 2025.

Figure 10: Renewable energy generation registered and installed



Sources: Eskom, NERSA and SARB

Figure 11: Monthly load-shedding



* As at 27 May 2025

Sources: Eskom X account, ESP (app) and SARB

Playbooks have been developed to respond to any operational disruption that may prevent the financial system from providing financial products and services uninterruptedly.[13] From an operational resilience perspective, the Financial Sector Contingency Forum (FSCF)[14] has developed frameworks for responding to shocks such as a loss of access to national and international financial and technological infrastructure. Operational disruptions such as the CrowdStrike incident in July 2024 or the failure of undersea data cables in March 2024 could also result in reduced, or even a complete loss of, access to critical international financial and technological infrastructure.

South Africa depends on nine undersea cables to connect it to the rest of the world. Four of these were damaged during the March 2024 incident, presenting a notable vulnerability to the domestic financial system. While not aimed at responding to any disruption in connectivity in particular, the FSCF's Alternative Connectivity Project mitigates some of the domestic financial system's vulnerability in this regard.[15]

The risk of critical domestic infrastructure failure has increased slightly since the November 2024 *FSR*. Despite the improved longer-term electricity-supply outlook and better rail and port infrastructure performance, the weak financial position of numerous municipalities and sustained pressure on the fiscus will curtail the investment required to maintain and expand critical domestic infrastructure.

Remaining on the FATF greylist over the medium term

Following the recent FATF Plenary meetings held on 12 and 13 June 2025 in Strasbourg, France, the FATF announced that South Africa had addressed or largely addressed all 22 action items agreed to as per the Action Plan following South Africa's greylisting in February 2023.[16] As a result, the FATF confirmed that an on-site assessment would be conducted to verify that reforms to combat money laundering and the financing of terrorism had been implemented and were being sustained, and that the necessary political commitment remained in place.

Following the announcement by the FATF, National Treasury released a media statement, noting that the FATF Africa Joint Group would conduct the on-site visit.[17] The on-site visit will take place before the next FATF Plenary in October 2025. Should the outcome of the on-site visit confirm that satisfactory progress had been made, the FATF is expected to delist South Africa from the greylist at its October 2025 Plenary meeting.

The announcement by the FATF means that the risk of South Africa remaining on the greylist has decreased significantly since the November 2024 *FSR*. Should South Africa be delisted from the FATF greylist at the FATF's Plenary meeting in October 2025, this risk will be removed from the RVM.

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13 Refer to the section 'Briefings on selected topics' on page 23 for an overview of how FSCF initiatives aimed at increasing the South African financial system's operational resilience have evolved.

14 For more information of the role and function of the FSCF, see https://www.resbank.co.za/content/dam/sarb/publications/media-releases/2023/fscf-21-feb/SARB%20statement%20on%20the%20role%20of%20the%20Financial%20Sector%20Contingency%20Forum.pdf.

15 Refer to the section on 'Briefings on selected topics' on page 23 for an overview of this initiative.

16 The statement is available at https://www.fatf-gafi.org/en/publications/High-risk-and-other-monitored-jurisdictions/increased-monitoring-june-2025.html.

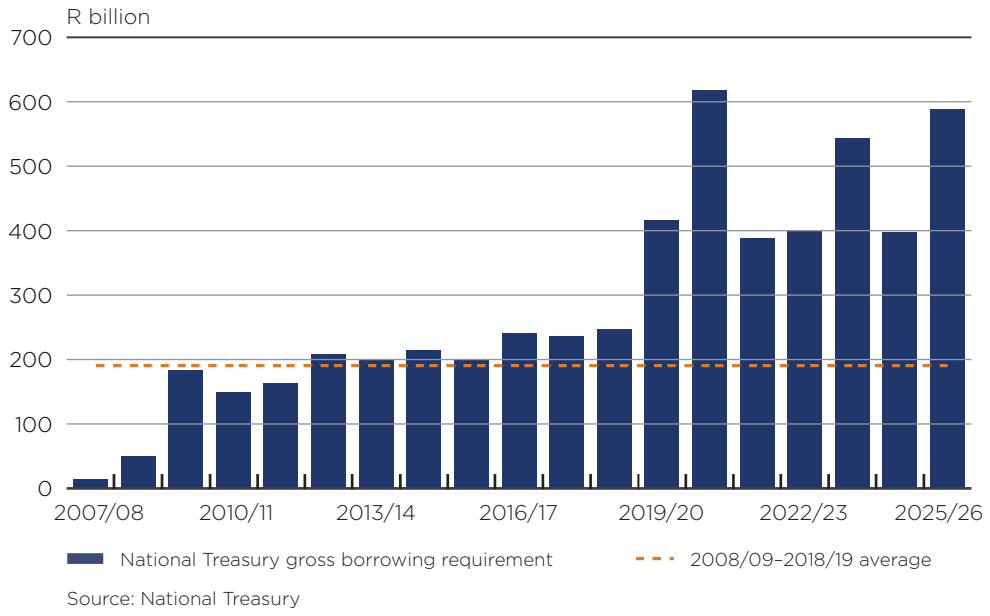
17 The media statement is available at https://www.treasury.gov.za/comm_media/press/2025/2025061301%20Media%20Statement%20-%20FATF%20Greylisting%20Progress%20Update%20for%20South%20Africa%20June%202025.pdf.

Deteriorating public sector debt ratios

South Africa recorded consecutive primary surpluses in the 2023/24 and 2024/25 fiscal years. Before that, the last primary surplus was recorded in the 2008/09 fiscal year. Improved market sentiment in the second half of 2024 also compressed sovereign yields, moderating the rise in debt-service costs.

Despite the improved outlook for the primary balance, there are various remaining risks to the fiscal outlook. Fiscal revenues are vulnerable to domestic and global shocks, which has historically translated to an underperformance in the primary balance and increasing sovereign debt. The projected 2025/26 borrowing requirement remains high relative to the 2008/09–2018/19 average, which makes South Africa's fiscal outcomes particularly vulnerable to shocks (Figure 12).

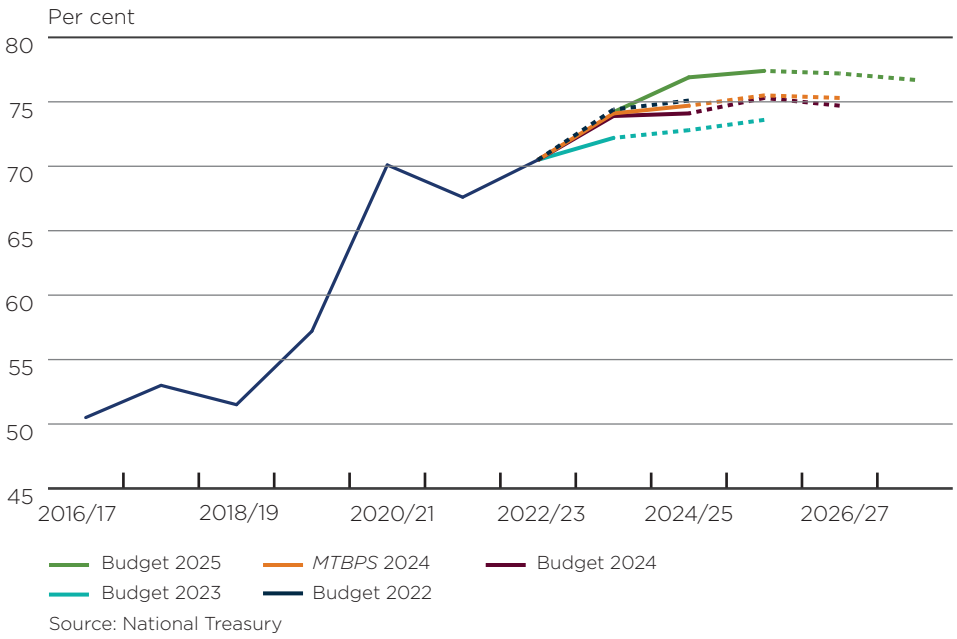
Figure 12: National Treasury gross borrowing requirement



Source: National Treasury

The 2025 *Budget Review* announced on 21 May 2025 projected South Africa's debt-to-GDP ratio to peak at 77.4% in 2025/26, higher than the peak of 75.5% projected in the 2024 *Medium Term Budget Policy Statement (MTBPS)* (Figure 13). Debt-service costs are also projected to remain high.

Figure 13: Government debt-to-GDP ratio



Source: National Treasury

The precarious financial positions of numerous SOEs and municipalities pose a risk for further deterioration in the fiscal position. This may materialise in the form of potential bailouts – as has been the trend since 2017 – or the realisation of contingent liabilities. Fiscal revenue shortfalls can lead to immediate budgetary constraints at national, provincial, municipal and SOE-specific levels, in turn curtailing the provision of critical infrastructure and services.

As mentioned in several previous editions of the *FSR*, the financial sector has significant sovereign exposures. Financial institutions hold high levels of government bonds in their portfolios, making them vulnerable to repricing risk, should the fiscal position weaken further, in particular if holdings are unhedged and not marked to market.[18]

Analyses by the Prudential Authority (PA) confirmed that the six domestic systemically important banks use effective hedging strategies and that adequate capital buffers are available for the valuation gap of government instruments held at amortised cost. As at 31 October 2024, systemically important banks' gross on-balance sheet exposure to sovereign instruments held at amortised cost amounted to R579.2 billion, with a fair value of R577.5 billion. The valuation gain of the hedges deployed to mitigate against the unrealised losses of R1.6 billion amounted to R5 billion, resulting in a post-hedge profit of R3.4 billion should the need have arisen to liquidate the positions. Given the prudent provisioning by banks for their sovereign exposures, the risks to financial stability appear contained. However, the SARB and the PA will continue to monitor developments that could change this assessment.

18 Valuation gaps could arise due to different accounting treatments by financial institutions of their holdings of government bonds, either by accounting for holdings at current market prices (i.e. at prices marked to the current market value), or by accounting for holdings that are intended to be held until maturity (i.e. at the price the bonds would have if they were held until they matured). Even if financial institutions intend to hold government bonds until maturity, a change in circumstances may force them to sell before maturity. If the prevailing market price is significantly lower than the value they accounted for had the instruments been held to maturity, this could cause significant liquidity challenges. For a more detailed discussion of this risk, see page 40 of the May 2023 *FSR* (https://www.resbank.co.za/en/home/publications/review/financial-stability-review).

High levels of public debt add another layer of vulnerability resulting from heightened geopolitical tension and policy uncertainty. Government's limited fiscal space restricts its ability to respond effectively to external shocks.

The South African financial system's vulnerability to the risk of deteriorating public sector debt ratios has remained unchanged since the November 2024 *FSR*. Expectations that South Africa's debt-to-GDP ratio will reach its peak in the 2025/26 fiscal year and the prudent provisioning by banks for their sovereign exposures support this assessment.

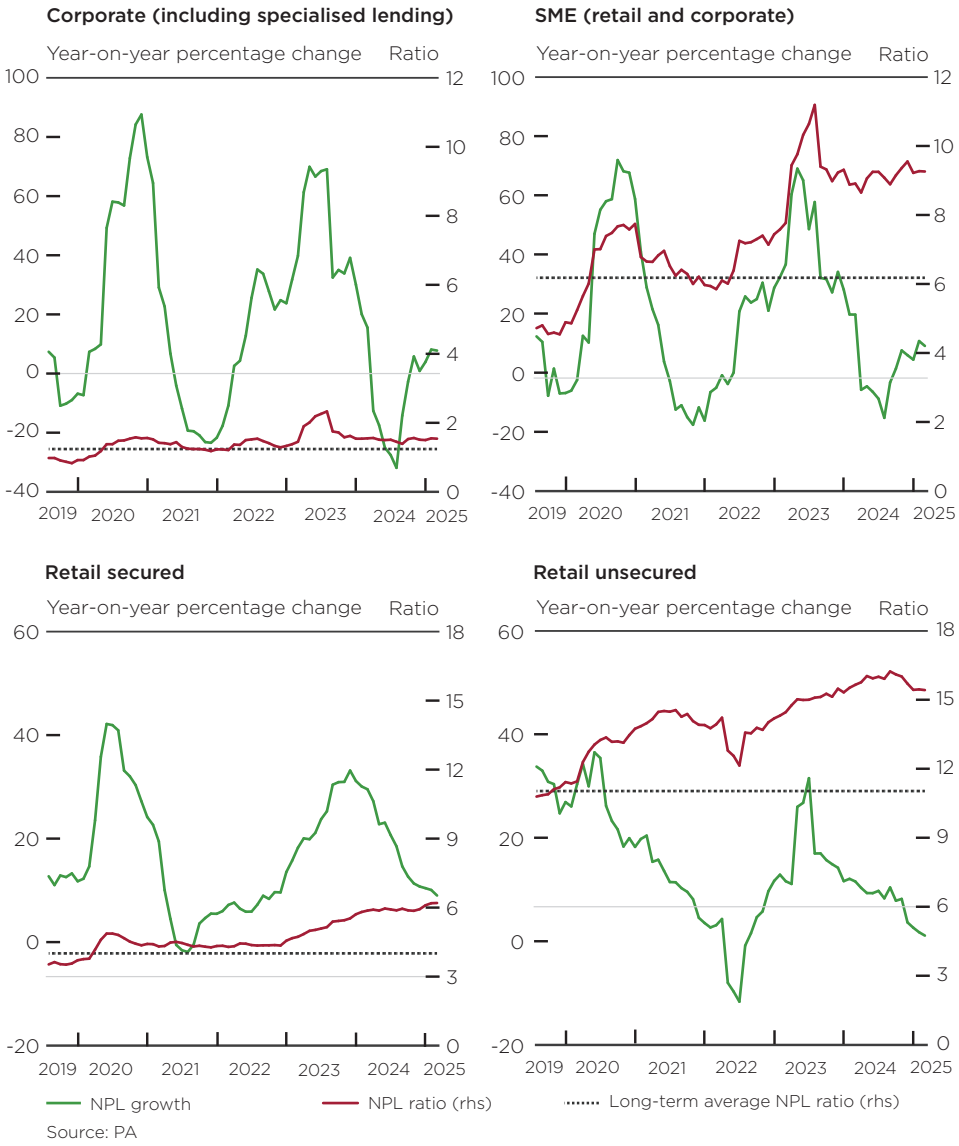
Increased financial distress in households and SMEs

Increased financial distress in households and SMEs is caused by factors such as high levels of debt, job losses or business disruptions. This can impact financial stability either directly (e.g. through loan defaults and delinquencies), or indirectly (e.g. by contributing to the systemic effects of already low growth and reliance on government support).

An indicator of financial distress in households and SMEs is the number of non-performing loans (NPLs) in the banking sector. Rising NPLs typically prompt lenders to tighten lending standards, in turn reducing the supply of credit.[19] NPLs have increased in the corporate and SME portfolios, but decreased in both the secured and unsecured retail portfolios since September 2024. However, the NPL ratios for all four of these asset classes remain above their long-term averages (Figure 14).

19 Refer to the credit-to-GDP gap (Figure 7 on page 7), which has been negative since the fourth quarter of 2020, implying that there has not been excessive credit extension over this period.

Figure 14: NPL ratios per asset class



Source: PA

An important mitigating factor against default risk in the banking sector is the combination of sound credit risk management practices and the strict provisioning requirements applicable to banks. While this may not necessarily protect borrowers from becoming financially distressed, it serves as a buffer for banks by increasing their resilience to rising impairments, in turn supporting financial stability. The vulnerability of the South African financial system to the risk of increased financial distress in households and SMEs has remained unchanged since the November 2024 *FSR*.

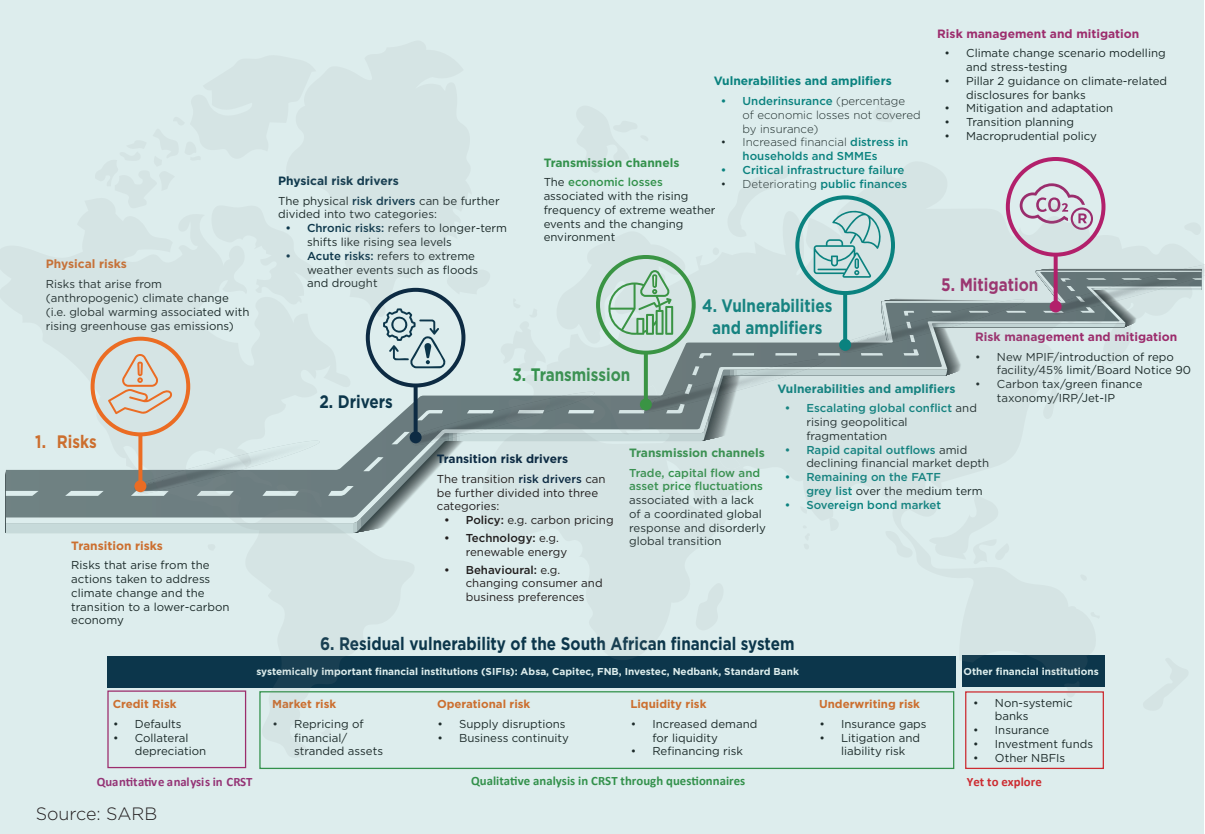
Perpetual risks

Climate change

The risks posed by climate change to financial stability remain broadly unchanged. This edition of the *FSR* introduces the SARB's overarching framework for assessing climate-related financial stability risks and vulnerabilities in the South African financial system. The framework (Figure 15) maps the process the SARB follows to gather relevant information and assess the residual vulnerability of the South African financial system to climate-related shocks, after accounting for existing mitigating measures. As was noted in the November 2024 *FSR*, these processes aim to

align the financial stability monitoring and assessment framework with international best practice.

Figure 15: SARB framework for assessing climate-related risks to financial stability in South Africa



Source: SARB

There is broad consensus in the literature that climate change poses two primary risks to the financial sector: physical and transition risks. Physical risks are mainly economic losses from more frequent and more intense weather events. Transition risks are increasingly driven by the lack of a co-ordinated global response to climate change and the inaction or inability of financial institutions to recognise and prepare for future risks and climate-related regulations. As countries transition at varying paces, the risk of a disorderly global shift to a low-carbon economy intensifies.

A growing topic of focus internationally is the climate insurance protection gap. It refers to the uninsured portion of economic losses arising from climate-related shocks, and it is expected to widen as the risks associated with climate change increase. A related issue is the growing list of uninsurable risks (i.e. risks that insurance companies explicitly exclude from available insurance cover). The SARB is currently exploring methodologies to determine the climate insurance protection gap in South Africa. Further research is therefore critical. While preliminary research to assess the materiality of certain transition risks for the South African banking sector has been completed,[20] more work is required to understand the transmission and amplification of both physical and transition risks. This would cover all financial institutions and certain non-financial sectors such as government, households and non-financial corporates.

20 Monnin et al. 'Transition and systemic risk in the South African banking sector: assessment and macroprudential options.' *South African Reserve Bank Working Paper Series. WP/21/12.*

This ongoing work forms part of the SARB's broader financial stability research agenda, aimed at closing data and knowledge gaps, developing climate-specific micro- and macroprudential indicators, and enhancing the monitoring of climate-related vulnerabilities. It will also support practical, evidence-based policymaking to improve the resilience of the South African financial sector to climate risks.

A cyber-incident with systemic impact

The cyber-environment is becoming increasingly complex due to the rapid development of new technologies, ongoing geopolitical uncertainties and widening skills gap in the cybersecurity industry. This complexity has broadened the gap between advanced and emerging economies, and has increased the disparities between different sectors in the economy. Increased geopolitical tensions further raise the likelihood of cyberattacks.

Cyberattacks on financial institutions have become so common that protecting against them is now routine. However, on a systemic level, the financial sector could fall victim to a situation where a single disruption could simultaneously impair multiple institutions, triggering a systemic event.

South Africa's cybersecurity spending remains below the mature market benchmark of 0.25% of GDP annually, which is a concern given the high cost of data breaches. South Africa's data breach costs in 2024 amounted to US$2.78 million, a slight decrease from US$2.79 million in 2023. Despite this small reduction, the average cost remains high.[21] Electricity-supply challenges in South Africa, although improving notably, add to cybersecurity vulnerabilities by exposing digital infrastructure to cyber-attacks. In addition, backup power systems often lack robust security protocols.

As part of ongoing efforts to increase its resilience to cyber-risk, the SARB, in collaboration with CybExer and using the Bank for International Settlements' (BIS) cyber-range infrastructure, hosted a cyber-range exercise from 11 to 14 March 2025. Such exercises are invaluable for exposing cyber-professionals to real-world cyber threats, but in a controlled environment. The exercise brought together 45 participants from 19 financial institutions, organised into 6 multidisciplinary teams based on cybersecurity technical proficiency to ensure balanced team capability.

The exercise tested participants across client-side, network and web application attack scenarios, simulating realistic and advanced threat vectors, including phishing, privilege escalation, supply chain compromise, data exfiltration and coordinated lateral movement across segmented networks. Participants were commended for their technical proficiency. Teams demonstrated strong situational awareness, effective internal coordination, and the utilisation of advanced monitoring tools to detect and respond to complex attacks. The exercise not only highlighted the resilience of South Africa's financial sector to cyber-attacks, but also underscored the maturity of its cybersecurity practices in line with international standards.

21 IBM. 2024. *Cost of data breach report*. Available at https://www.ibm.com/downloads/documents/us-en/107a02e94948f4ec.

Low and inequitable economic growth

South Africa's growth problem has not improved since the previous *FSR*. Real GDP growth has averaged only 0.54% on an annual basis since 2018, entrenching low private investment, higher levels of inequality and increasing levels of unemployment. The likely non-renewal of AGOA and the imposition of tariffs on US-South Africa trade would further exacerbate the challenge of low and inequitable economic growth.

Policy actions and initiatives undertaken to enhance domestic financial stability

- **Introducing a positive cycle-neutral (PCN) CCyB:** First announced in the November 2023 *FSR*, the CCyB increased from 0% to 1% on 1 January 2025. Banks have until 31 December 2025 to implement the increase. A series of papers was published on 13 June 2025 with the methodology and results of the econometric models employed to model the impact of the 1% increase in the CCyB.[22]
- **Mitigating the sovereign-financial sector nexus:** The PA is monitoring this risk through a bi-annual survey of banks' valuation and hedging practices, and regularly reports to the FSC on these exposures to ensure that they are managed prudently.
- **Increasing the financial sector's resilience to deal with systemic operational disruptions:** The SARB, through the FSCF, continued to plan for operational disruptions to the financial system with potential systemic impact, with notable progress made with the FSCF's Alternative Connectivity Project.[23]
- **Enhancing crisis preparedness and resolution planning:** The SARB conducted two crisis simulation exercises in the first half of 2025. The first simulation was aimed at testing the processes of the SARB – as the Resolution Authority – and the Corporation for Deposit Insurance (CODI) in the event of a medium, non-systemically important bank failure. The second simulation was an industry-wide desktop test of the agreed procedures for an orderly closure and reopening of markets, irrespective of the trigger event.[24]
- **Enhancing cyber-resilience in the financial sector:** The SARB, in collaboration with CybExer and using the BIS's cyber-range infrastructure, hosted a cyber-range exercise from 11 to 14 March 2025. The exercise provided a valuable opportunity for cyber-professionals to respond to real-world cyber-threats, but in a controlled environment.

22 These papers are available at https://www.resbank.co.za/en/home/what-we-do/financial-stability.

23 Refer to the section on 'Briefings on selected topics' for an overview of this initiative.

24 Refer to the section on 'Briefings on selected topics' for an overview of the key learnings from these exercises.

Key topics discussed at FSC and FSOC meetings

The following key topics and risks to financial stability were discussed at the FSC and Financial Stability Oversight Committee (FSOC) meetings during the period under review:

1. the methodology, scenarios and results from the CRST;
2. calibrating the CCyB;
3. determining the most appropriate methodology to calculate South Africa's credit-to-GDP gap;
4. the financial stability implications of the weak fiscal position and the sovereign-financial sector nexus;
5. increased geopolitical tension and policy uncertainty;
6. loss of access to critical international financial infrastructure;
7. critical domestic infrastructure failure;
8. reduced market depth and liquidity; and
9. progress made in removing South Africa from the FATF greylist.

Briefings on selected topics

Increasing operational resilience

As discussed in the November 2024 *FSR*, increasing the operational resilience of the domestic financial system against the failure of critical national infrastructure remains a key financial stability priority. In pursuit of this objective, the SARB, together with the FSCF, announced in 2023 the development of various contingency plans to respond to a shock that could prevent the financial system from providing financial goods and services uninterruptedly.

The initiative was initially motivated by the risk of an electricity grid collapse. The first phases of the project focused predominantly on how financial markets would be closed and reopened in an orderly manner. This led to the Orderly Closing and Reopening of the Markets (OCARM) initiative. Extensive work has been done to develop playbooks for the practical implementation of OCARM.[25]

In 2024, OCARM's focus was broadened to ensure business continuity under different disruption scenarios. A current priority initiative is to establish direct, alternative connectivity among key nodes in the financial sector to enable continuity in a scenario where existing telecommunication networks are unable to function so that a certain level of payment, clearing and settlement activity can continue. This has been identified as an extreme but plausible scenario that will render financial systems unavailable, and prevent the financial system from providing services uninterruptedly. Other scenarios with related impact include a distributed cyber-attack on the financial sector or the loss of east- and west-coast undersea fibre cables.

Other initiatives such as the SARB's Payments Ecosystem Modernisation (PEM) Programme also support financial stability by ensuring the ongoing flow of funds, even during periods of stress.

25 See the briefing on the next page on the OCARM simulation exercise that was conducted in April 2025.

The role of crisis simulation exercises in increasing financial system resilience

Overview

The SARB conducts crisis simulation exercises in the normal course of business. The previous simulation was conducted during 2023. The SARB conducted two additional simulation exercises in 2025. The first simulation was aimed at testing the processes of the SARB (i.e. the Resolution Authority) and CODI, and the second simulation was an industry-wide OCARM which could be invoked in the event of a severe disruption to the economy.

Simulation to test Resolution Authority and CODI processes

This scenario simulated the failure of a fictitious, medium-sized bank. The Resolution Authority and CODI established a control team with support from specialists of the World Bank Group. Participants in the simulation were from the PA, the SARB's Legal Services, Financial Markets, Communications and Financial Services departments and the Financial Sector Conduct Authority (FSCA). The role of the Minister of Finance, who needs to issue a determination to place a designated institution in resolution, was played by the control team.

The exercise was planned in such a way that placing the bank in resolution was inevitable. Much of the discussion and focus of the exercise centred on when the trigger point had been reached to place the bank in resolution. Several disruptive but plausible hypothetical developments were included during the course of the exercise to complicate the decision-making process. These included an emergency liquidity assistance application from the bank which needed to be considered, spillovers to another (solvent) bank in the same group as the failing bank, as well as pressure from 'fake news' shared via social media. Participants could consult and collaborate freely with the various participant groupings, but needed to follow their own internal processes to arrive at the most appropriate decision, like they would in a real-life scenario.

The key decisions that had to be taken during the exercise were around whether the bank was failing or likely to fail, when to communicate to the public, distinguishing between temporary liquidity issues and more structural solvency issues, when and with whom to coordinate, the emergency liquidity assistance application, the selection and deployment of resolution tools, the valuation and funding of the resolution action, and the effect on financial inclusion and competition.

The World Bank commended the SARB's constant communication with the public, reassuring them that their money was safe. Competition issues were discussed by the participants and the SARB's legal powers in resolution were confirmed. Overall, the simulation exercise was well executed and provided valuable insights into existing key strengths as well as areas for improvement.

Simulation to test the OCARM initiative

On 1 April 2025, a scenario-based desktop exercise was conducted with the SARB and industry participants who were selected as a representative sample of the payments, cash, markets, savings and investments industries. The scenario was a national grid failure with a time frame within which to execute OCARM.

Overall, the simulation exercise provided valuable insights into existing strengths as well as scope for improvement. The simulation highlighted the importance of both the SARB and industry's ability to meet the principles contained in the OCARM framework. Participants agreed on the importance of continuously improving the

OCARM playbooks and communicating this appropriately across the sector. The simulation was successful in identifying challenges that could prevent an orderly OCARM, which means this can be proactively addressed at an industry level.

2024 Climate Risk Stress Test of South African systemically important banks

Executive summary

Climate change presents risks to the stability of the South African financial system. The domestic financial system's vulnerability to climate-related risks is influenced by its exposure to carbon-intensive activities, businesses and physical assets. South Africa has already experienced the realisation of some of these risks, and their incidence is likely to increase in the future.

In support of its legal mandate to protect and enhance financial stability, the SARB conducted a CRST for the first time, in 2024. The SARB's CRST was an exploratory macroprudential stress test that subjected systemically important South African banks to a set of plausible, long-term climate-related scenarios.

The exercise indicated that while systemically important financial institution (SIFI) banks are reasonably well positioned to assess their vulnerability to climate risks, certain challenges remain, specifically around data gaps and modelling capabilities. Meanwhile, the quantitative results highlighted areas for further research.

Purpose, scope and methodology

The CRST covered the six South African banks designated as SIFIs[26] under section 29 of the FSR Act. The primary goal of the CRST was to test the resilience of the banking sector to physical[27] and transition[28] risks by evaluating SIFIs' exposures. As the first exercise of its kind in South Africa, the CRST included the secondary objective of assessing banks' data and methodological processes for considering climate-related risks.

Given data gaps and modelling constraints, full balance-sheet modelling was not included in the exercise. Instead, SIFIs were required to estimate the impact of various climate scenarios on credit risk quantitatively, while other key risks were assessed qualitatively.

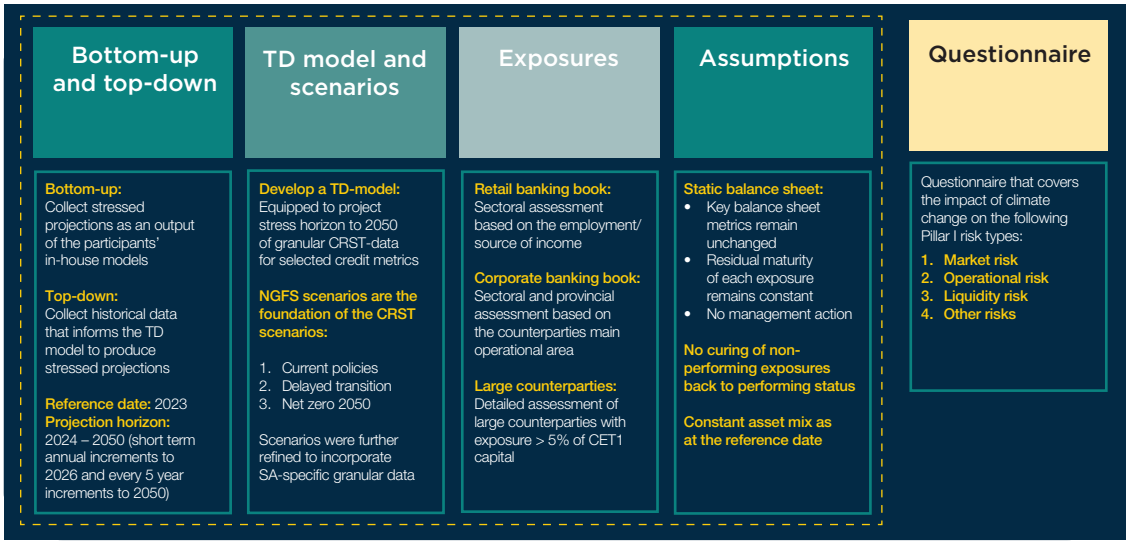
26 Absa, Capitec, FirstRand, Investec, Nedbank, and Standard Bank. As at the reference date of the exercise (31 December 2023) these institutions accounted for 92% of the total banking sector assets.

27 Physical risks include chronic changes such as rising sea levels and shifting weather patterns, alongside acute events such as floods and droughts.

28 Transition risk encompasses challenges arising from the shift to a low-carbon economy, driven by regulatory changes, market shifts, and technological advancements. It also includes behavioural changes, such as shifts in consumer preferences and investor demands towards sustainability.

Figure 16 summarises the key elements of the CRST framework and design features. The framework consists of a set of common scenarios and key modelling assumptions to ensure consistent and comparable outcomes across participant banks. Given the long-term nature of climate risks, the projection horizon was set out to the year 2050.

Figure 16: CRST overview



Source: SARB

The 2024 CRST framework used both a bottom-up (BU) and a top-down (TD) approach for projections. BU assessments were conducted by individual SIFI banks using internally developed stress-testing models and expert judgment based on the SARB's climate scenarios discussed later. To validate the BU submissions, the CRST included a TD assessment using an internally developed model. Box 2 details the SARB's TD CRST modelling framework.

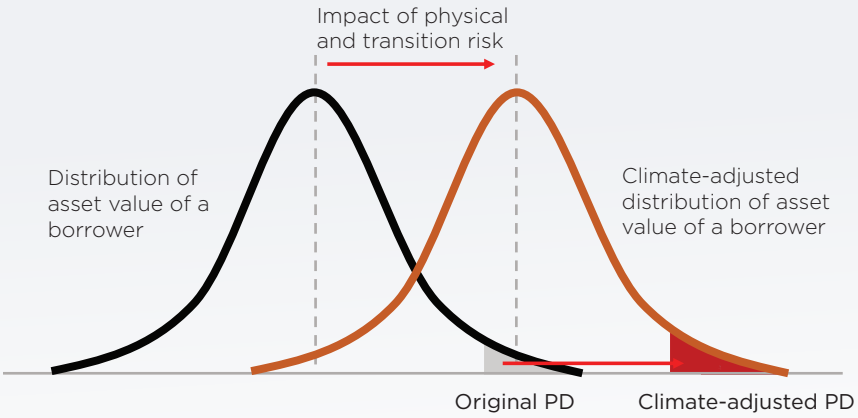
Box 2: The SARB's top-down Climate Risk Stress Test modelling framework

The SARB's top-down (TD) climate credit-risk model was designed both to assess climate-change effects on banks' credit risk, and to challenge and validate participating banks' own results. The model is based on the same set of Climate Risk Stress Test (CRST) assumptions and scenarios given to the systemically important financial institutions (SIFIs).

The model is an adaptation of the methodologies applied by the United Nations Environment Programme Finance Initiative (UNEPFI)[1] and the Bank of Canada (BoC)[2]. The key output of the climate model was expected credit losses, which is the product of credit exposure and climate-adjusted probability of default (PD) and loss given default (LGD).

Climate-adjusted PDs were derived by converting through-the-cycle PDs into a multi-factor Vasicek model, incorporating multiple factors to capture transition and physical risks on both macroeconomic and sectoral scales. These factors introduced systematic risk to asset values, shifting their distribution. As shown in Figure B2.1 below, a reduction in obligor asset values would shift the credit loss distribution to the right, indicating increased credit risks. LGDs were modelled using the Frye-Jacobs relationship[3] to ensure they are sensitive to the same factors driving the PDs.

Figure B2.1: Shift in the distribution of asset value of a borrower



Source: SARB climate risk model

1 UNEP-FI, Carlin, D. and R. Fischer. 2020. Beyond the Horizon: New Tools and Frameworks for Transition Risk Assessments from UNEP-FI's TCFD Banking Program.

2 Bank of Canada, 2022. Assessing Climate-Related Financial Risk: Guide to Implementation of Methods.

3 The Frye-Jacobs relationship enables the prediction of the conditional LGD as a function of the conditional PD.

SIFIs were asked to break down their exposures across three dimensions for the CRST. First, the participating banks were required to perform the natural split between their retail and corporate banking books, while additionally isolating the largest 'single name' counterparties (subject to the counterparties' exposures being more than or equal to 5% of the individual SIFI's common equity tier 1 (CET1) capital). Second, for each counterparty on their balance sheet, the banks were required to identify an economic sector classification. For the corporate counterparties, sectoral allocation was assigned to the entities' main source of activity, while for retail counterparties, sectoral exposures were allocated to their source of employment or income. Finally, participating banks were tasked with identifying a geographical location (at provincial level) for each exposure.

The inclusion of the retail counterparties or private households in the CRST is relatively unique in comparison to climate scenario analysis performed in other jurisdictions.

As climate risk does not discriminate between corporate entities and the public in general, the exclusion of private households from a climate scenario assessment will tend to understate the full impact. Recent global events have attested to the fact that physical risks impact households as much as corporate entities.

Given heterogeneity within sectors, and drawing from existing academic literature,[29] economic sector classifications were further divided[30] into climate-sensitive and non-climate-sensitive categories. For example, within the agriculture sector, certain subsectors with drought-resistant crops might be considered less climate sensitive. By categorising SIFI exposures via this combined classification system (i.e. the CRST taxonomy), the results can be assessed through a climate-sensitive lens.

Given the exploratory nature of the CRST exercise, relatively few prescriptive assumptions were provided. SIFIs were not required to anticipate changes to accounting standards, tax regimes, or regulatory reforms effective after the reference date (31 December 2023). Furthermore, both the BU and TD exercises followed a static balance sheet approach throughout the projection period, implying that the size and asset mix of the balance sheet remain unchanged over the forecast horizon. This approach enhanced the ability to measure potential risks by isolating scenario impacts on bank exposures, but did not consider management actions that could mitigate risks.

Scenarios

The CRST was based on three long-term scenarios developed by the Network for Greening the Financial System (NGFS) in 2023.[31] These scenarios were adapted for South Africa through joint modelling work by the International Food Policy Research Institute (IFPRI)[32] and the National Institute of Economic and Social Research (NIESR).[33] The scenarios explored a range of physical and transition risks as shown in Figure 17. It should be noted that the positioning of scenarios is approximate and based on an assessment of physical and transition risks to the year 2100.

29 Battiston, S., Mandel, A., Monasterolo, I., Schütze, F., and Visentin, G. 2017. 'A climate stress-test of the financial system'. Nature Climate Change, 7(4), pp283-288. See also Herzog, T., Pershing, J., and Baumert, K. A. 2005. 'Navigating the Numbers: Greenhouse Gas Data and International Climate Policy'. World Resources Institute.

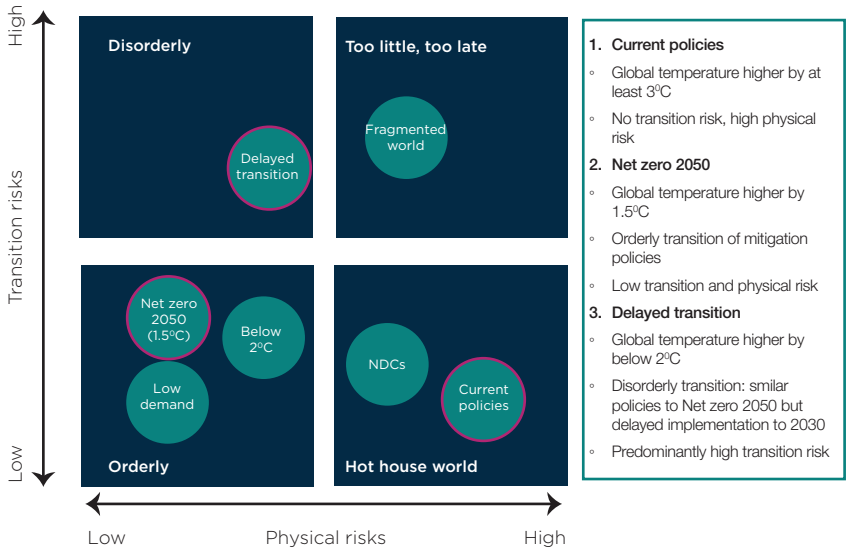
30 This division utilised the Standard Industrial Classification (SIC) codes of all economic activities. These numerical codes are used to standardise the categorisation of the participating banks' corporate and retail exposures according to their primary business activities or sources of income. SIC codes are available to the fourth level of classification tiers.

31 For more, see NGFS, 2023, *Scenarios for central banks and supervisors*, available at https://www.ngfs.net/en/publications-and-statistics/publications/ngfs-climate-scenarios-central-banks-and-supervisors-phase-iv.

32 Anvari et al. 2022. 'A climate change modelling framework for financial stress testing in Southern Africa'. *South African Reserve Bank Working Paper Series. WP/22/09*.

33 Cornforth, E., Partel, U., Sibande, X., Morema, K., Makrelov, K. and Hurst, I. 2025. The South African NiGem expansion. *South African Reserve Bank Working Paper Series (forthcoming)*.

Figure 17: NGFS scenarios for the 2024 CRST



Source: NGFS

The 'hot house world' and 'too little, too late' scenarios mainly explore the physical risks associated with delayed policy action, while the 'orderly' and 'disorderly' scenarios mainly explore transition risk. Three scenarios were selected for the CRST, namely 'Current policies', 'Delayed transition' and 'Net zero 2050'. These scenarios are not forecasts, but rather represent a range of plausible climate futures. They are differentiated primarily by their level of climate ambition, the timing of policy implementation, the distribution of policy measures across sectors and regions, and technology assumptions such as the availability and viability of carbon dioxide removal.

The 'Current policies' scenario assumes no new measures to improve on current policies. Technology change is slow, and there is low use of carbon dioxide removal technologies. As a result, the transition to a carbon-neutral economy never occurs. The failure to halt significant global warming leads to severe physical risks as critical temperature thresholds are exceeded.

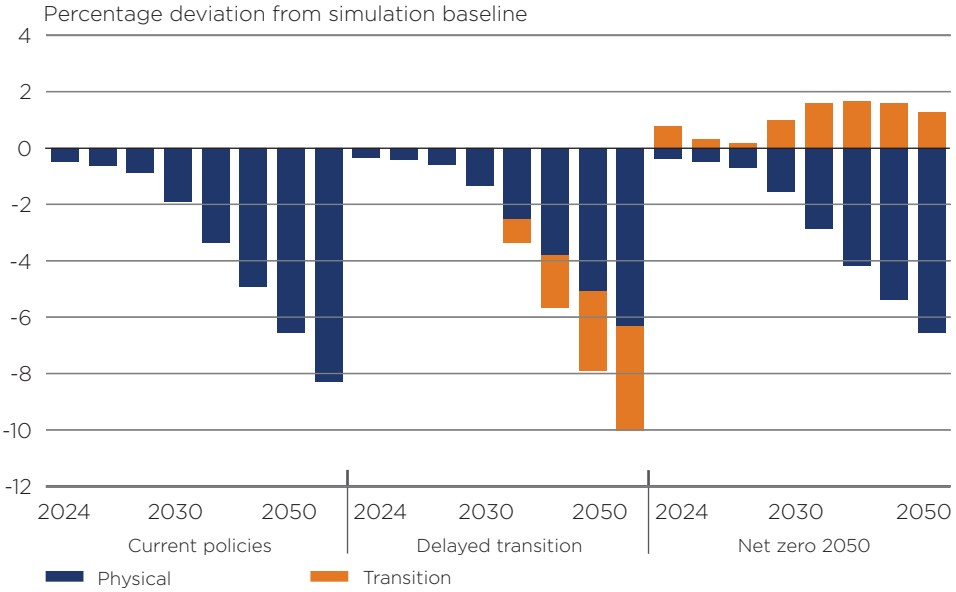
In the 'Delayed transition' scenario, by contrast, annual emissions decrease after 2030, with strong policies implemented to compensate for lost time and limit global warming to below 2°C. Implementation is disorderly with high variation across countries and sectors.

The 'Net zero 2050' scenario assumes immediate policy action that becomes gradually more stringent. Technological change is rapid with medium to high use of innovative carbon dioxide removal technologies. This limits global warming to 1.5°C, with the world reaching global net zero CO^2 emissions around 2050. This results in more subdued physical risks that are further mitigated by the benefits of more orderly and timely transition efforts.

Figure 18 shows how GDP is likely to be impacted compared with a hypothetical scenario in which no transition or physical risks occur. The results show that climate change is likely to have a negative impact on GDP across all scenarios, with the physical risks emanating from climate change likely to outweigh transition risks. However, transition risks, which are largely driven by higher carbon prices and the

implementation of related policies, can be minimised through an orderly and early transition.[34] This is seen in the 'Net zero 2050' scenario, where the physical risks from climate change are partially offset by growth effects from carbon revenue recycling.[35]

Figure 18: Physical and transition risk impact on GDP, relative to no climate change



Source: National Institute Global Econometric Model (NiGEM)

The interconnected nature of climate shocks mean that other macroeconomic channels are also affected. Inflation rates are expected to increase significantly in the near term for the 'Net zero 2050' scenario due to the immediate implementation of mitigation strategies. However, for the 'Delayed transition' scenario, inflation is expected to follow current policies and then breach the upper inflationary band from 2030 as the shadow carbon prices add upward inflationary pressure to the consumer goods basket. All three scenarios trigger a monetary policy response to mitigate the ensuing price instability.

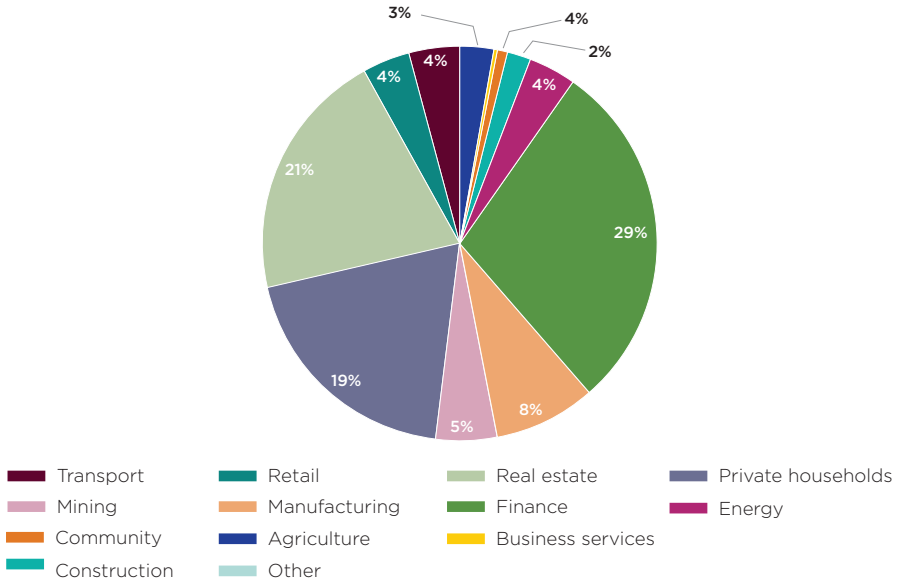
Quantitative results

Using the CRST climate-sensitivity taxonomy, participant banks categorised 68% of their total credit exposure as non-climate sensitive and 32% as climate sensitive at the end of 2023. The latter percentage represents SIFIs' counterparty exposure to sectors that are either carbon intensive or undergoing transitions to low carbon intensity. Figure 19 shows a breakdown of the climate-sensitive segment across economic sectors.

34 This is consistent with Monnin et al. 2024. 'Transition and systemic risk in the South African banking sector: assessment and macroprudential options'. *South African Reserve Bank Working Paper Series WP/24/12*.

35 See Van Heerden et al. (2016). 'The economic and environmental effects of a carbon tax in South Africa: A dynamic CGE modelling approach'. SAJEMS Asset Research NS 19. 2016. No. 5, pp. 714-732.

Figure 19: Sectoral structure of climate-sensitive credit exposures



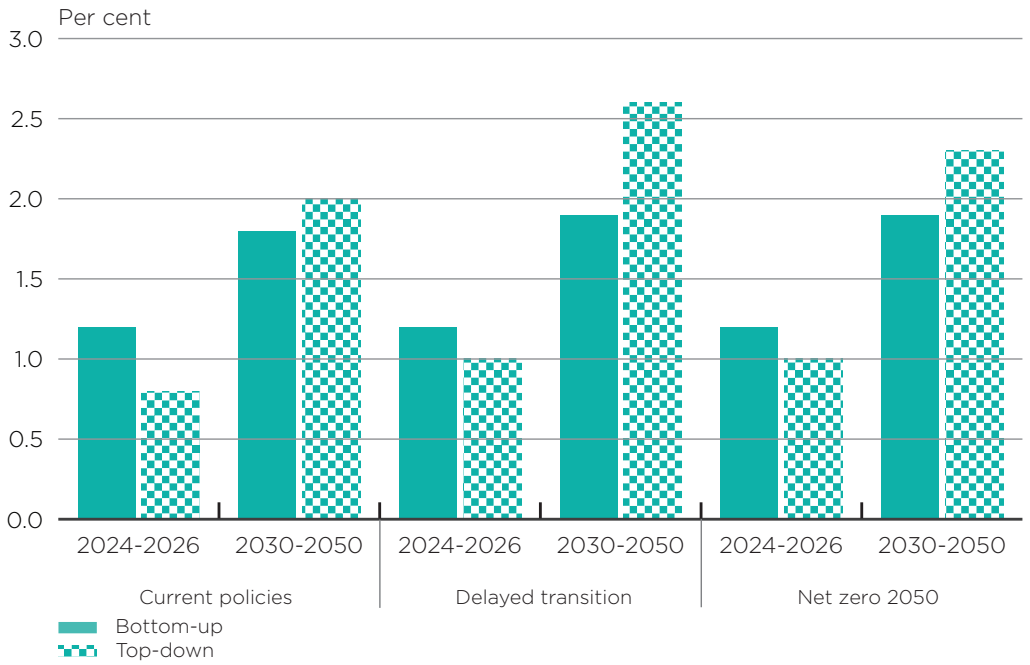
Note: Percentages depict sectoral proportions of only the SIFIs' climate-sensitive total credit exposure at the reference date of 2023.

Source: SARB

Figure 20 illustrates the expected credit losses over the projection horizon, across the three scenarios, from both a BU and TD perspective. Aligned with the increased price effects and weaker economic growth in the 'Delayed transition' scenario, both the BU and TD results indicate that losses will be most severe in the medium to long term.

Contrary to expectations, the 'Current policies' scenario appears to have the least severe impact within the projection horizon. Imperative to this finding is the limitation of the cut-off date of the CRST projection horizon of 2050. If the horizon was extended further, eventually physical damages nature-related risks from unabated climate change in the 'Current policies' scenario would accelerate rapidly whilst the mitigating climate policies from the 'Net zero 2050' and 'Delayed transition' scenarios would positively impact the economy, lead to lower average temperatures and in turn reduce losses.

Figure 20: Average expected credit losses from climate-sensitive exposures

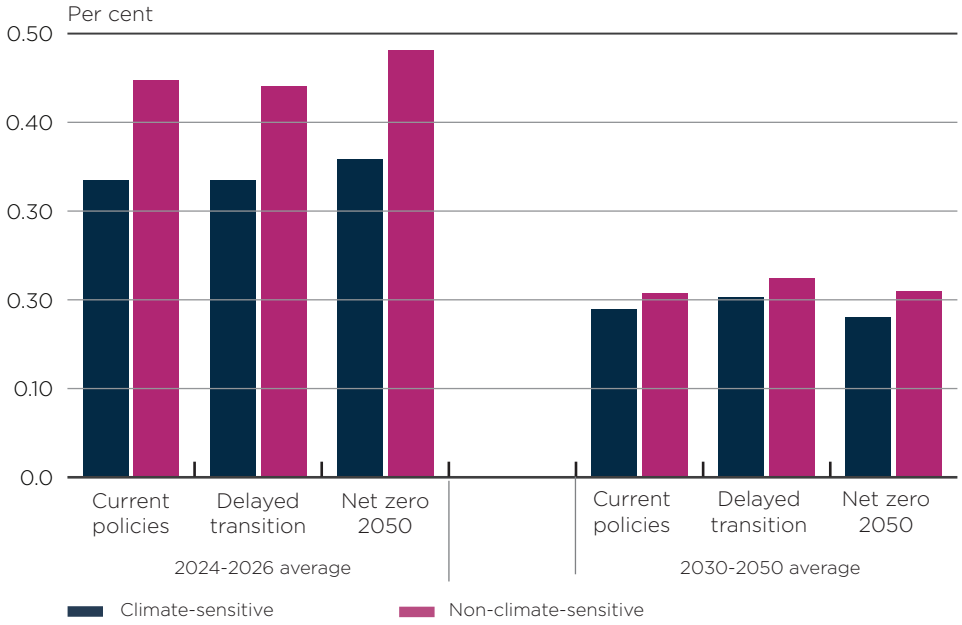


Note: Average expected credit losses are presented relative to credit exposure to climate-sensitive sectors. The short run covers annual increments from 2024 to 2026, whilst the medium to long term cover 5-year increments from 2030 to 2050.

Source: SARB

To mitigate against these losses, banks raise impairments against both climate-sensitive and non-climate-sensitive categories. Figure 21 shows that, in the short run, the average pool of new impairments for the non-climate-sensitive categories outweighs the climate-sensitive segments relative to their performing exposures. However, over the medium to longer term, the gap between climate-sensitive and non-climate-sensitive categories narrows as risk mitigation nears equal distribution across the two segments.

Figure 21: Average credit loss ratio for climate-sensitive and non-climate sensitive categories

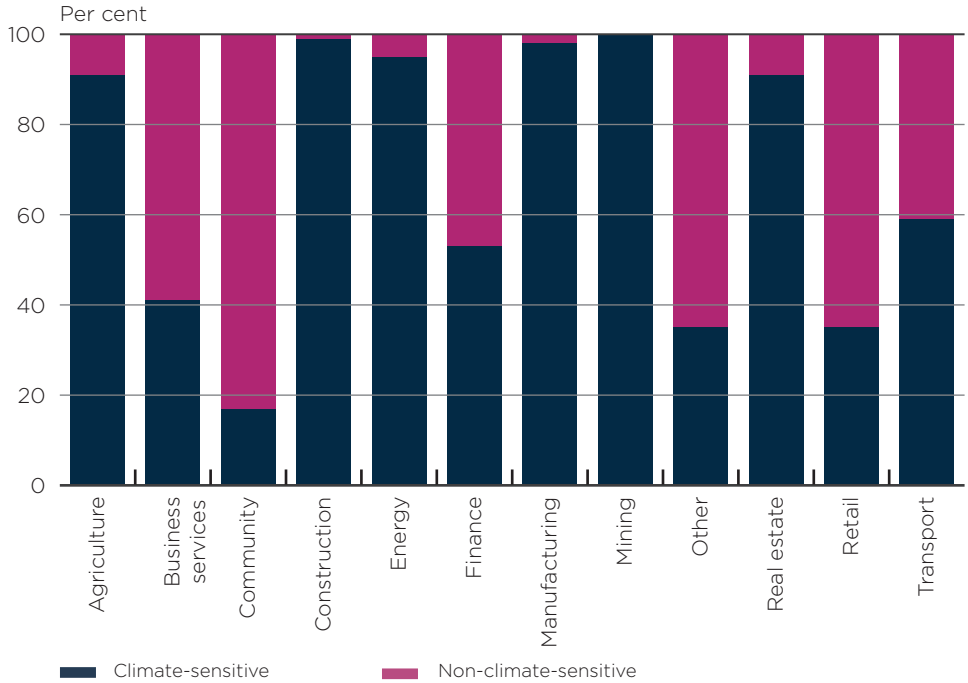


Note: Credit loss ratios are calculated as average new impairments relative to the respective performing exposures.

Source: SARB

To better understand the sectoral exposures within the retail credit book of the SIFI banks, Figure 22 depicts one of the most significant asset classes for banks, namely residential mortgages. This asset class provides unique insights as it is susceptible to both physical risk (i.e. due to lower house prices and/or risk to damage from acute risk) and transition risk (i.e. if borrowers' ability to repay their home loans is negatively impacted).

Figure 22: Sectoral allocation of residential mortgage advances by climate sensitivity



Note: Sectoral allocation is based on the retail counterparties' total credit exposure by source of income or employment holding a mortgage asset class.

Source: SARB

Frequent physical risk events can also reduce the market value of collateral over time, posing the risk of stranded assets. The severe floods in KwaZulu-Natal in 2022 illustrated the detrimental impact on both the economy and collateral values, especially if such events become more frequent.

The CRST exercise also assessed the impact of physical risk on sectors like real estate, which approximates to corporate mortgage advances. LGD ratios were evaluated with and without insurance coverage. This metric was primarily designed to test the hypothesis that if insurers withdrew coverage, banks could face significant losses from climate-related events. Without insurance, the financial burden of damages from extreme weather events would fall directly on the banks, leading to increased loan defaults and lower collateral values. Any absence of insurance for natural catastrophe events would lead to higher LGDs, underscoring the critical role of insurance in managing and transferring risk. To mitigate these risks, banks may need to adopt more stringent measures or explore innovative financial instruments and partnerships. This warrants further research and cross-collaboration between the insurance and banking sectors.

Qualitative results

In addition to credit risk, the CRST also included qualitative assessments of climate risk across various Pillar 1 risks. SIFIs' responses to the qualitative evaluation assessments highlight several key areas for future focus. Firstly, SIFIs are committed to aligning with the PA's 2024 Guidance Notes on climate-related disclosures for banks,[36] demonstrating a continuous effort to enhance climate risk management practices. However, the assessments revealed significant limitations in data and modelling capabilities, which hinder comprehensive climate risk assessments. To bridge this gap and to allow prioritisation for the development of future modelling capabilities, SIFIs ranked the risk categories (Table 1) within the market and operational risk pillars that would be most impacted by climate risk.

Table 1: SIFI rankings of market and operational risk variables relative to climate risk

Rank (highest to lowest level of risk)	Market risk	Operational risk
1	Interest rate risk	Business disruptions and system failures
2	Equity risk	Damage to physical assets
3	Forex risk	Clients, products and business practices
4	Commodity risk	Execution, delivery and process management
5		Employment practices and workplace safety
6		Internal fraud
7		External fraud

Source: SARB

36 Available at https://www.resbank.co.za/en/home/publications/guidance-notes/banks-guidance-notes?year=2024&page=1

The participating banks' collated responses to the qualitative component of the CRST underscore that climate risk affects various aspects of the banking sector. Regular staff training and application of innovative modelling approaches has been emphasised as a crucial component in equipping SIFIs to manage climate risk effectively. Additionally, business continuity plans have been updated to account for natural catastrophes that may occur due to climate change, ensuring and enhancing operational resilience.

Conclusion

The primary purpose of the CRST was to test the resilience of the banking sector to climate change, from both a physical and transition risk perspective. As the world is confronted with increasing and uncertain climate risks, exercises of this nature for financial stability monitoring purposes are critical. The CRST exercise was able to deliver the following objectives and outcomes:

- Gain an understanding of SIFIs' current climate risk stress-testing frameworks and asses their level of preparedness.
- Identify data gaps and collective challenges faced by SIFIs.
- Develop climate scenario analysis capabilities both in financial institutions and the SARB.
- Understand the mitigating actions that SIFIs might take in response to climate-related risks.

The results indicate that while some SIFIs demonstrated the ability to assess climate risk and implement potential mitigation strategies effectively, this exercise—being the first of its kind—also highlighted areas for improvement. The SARB will continue to engage with SIFIs to resolve data challenges that need to be addressed to better assess and embed climate risk within their existing risk management frameworks and stress-testing capabilities.

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Glossary

- **Financial stability risk:** Any adverse development that could prevent financial institutions from providing financial products and financial services, and financial market infrastructures from performing their functions and duties in terms of financial sector laws, without interruption despite changes in economic circumstances, and without a loss of general confidence in the ability of financial institutions and financial market infrastructures to do so.
- **Vulnerability:** A characteristic of the financial system that increases the likelihood and/or impact of a financial stability risk realising.
- **Shock:** An event that may trigger the realisation of financial stability risk.
- **Amplifier:** A property, factor or action that increases the vulnerability.
- **Mitigant:** A property, factor or action that reduces the vulnerability.
- **Transmission channels or mechanisms:** The channels through which the materialisation of a financial stability risk could cause financial instability.
- **Residual vulnerability:** The assessed vulnerability after considering mitigants.
- **Resilience:** A characteristic of the financial system that decreases the likelihood and/or impact of a financial stability risk realising.
- **Financial market infrastructures (FMIs):** FMIs include payment market infrastructures and market infrastructures (i.e. exchanges, central securities depositories, central counterparties, clearing houses and trade repositories).

Annexure A: Financial stability heatmap

The financial stability heatmap is composed by (i) identifying various financial stability elements; and (ii) assigning a weighted colour rating to the identified elements by using predefined indicators. The elements comprising the financial stability heatmap and the corresponding financial stability indicators underlying the colours on the heatmap are presented in Table A.1 below.

Table A.1: South African financial stability heatmap elements and indicators

Component	Indicator	Measure
Risk appetite and asset valuation partition		
Residential real estate	Real house price growth	BIS real residential property prices year on year
Equity market	JSE: price-earnings ratio	JSE All Share price-earnings ratio
	Chicago Board Options Exchange (CBOE) Volatility Index (VIX)	Logarithm of CBOE VIX
Government bond market	South African credit default swap (CDS) spread	CDS spread on South African five year government bond
	Merrill Lynch Option Volatility Estimate (MOVE)	Logarithm of MOVE
Corporate bond market	Corporate spreads	JP Morgan Corporate Emerging Market Bond Index
Banking sector: risk appetite	Bank lending margin	Weighted average lending rate *minus* weighted average deposit rate
Financial sector partition		
Banking sector	Capital adequacy ratio (CAR)	Capital divided by risk-weighted exposure
	Real credit growth	Real growth in gross loans and advances
	Loan-to-deposit ratio	Gross loans and advances divided by deposits *plus* current accounts *plus* other creditors
	Liquidity coverage ratio	High-quality liquid assets (HQLAs) divided by net cash outflows
	Maturity mismatches	Cumulative on-balance sheet contractual mismatch divided by contractual maturity of assets
	Sovereign exposure	Treasury bills *plus* government bonds divided by total assets
	Housing market exposure	Residential mortgages divided by total loans and advances
Insurance: life	Liquidity transformation	Illiquid financial assets divided by total assets
	Leverage	Total financial assets divided by equity
	Solvency capital requirement (SCR)	SCR median
Insurance: non-life	Liquidity transformation	Illiquid financial assets divided by total financial assets
	Leverage	Total financial assets divided by equity
	SCR	SCR median

Table A.1: South African financial stability heatmap elements and indicators

Element	Indicator	Measure
Other financial institutions (OFIs) which include unit trusts and finance companies	Credit intermediation	Loans divided by total financial assets
	Liquidity transformation	Illiquid financial assets divided by total financial assets
	Leverage	Total financial assets divided by equity
Sector-wide	SRISK	NYU Stern
Non-financial sector partition		
Households	Debt-to-disposable income ratio	Household debt to disposable income of households
	Debt-service ratio	Ratio of debt-service costs to disposable income
	Net savings	Net savings by households
Non-financial corporates (NFCs)	Debt-to-net-operating-income ratio	Debt divided operating income
	Interest coverage ratio (ICR)	Earnings before interest and taxes (EBIT) divided by interest expense
Government	Debt-to-GDP ratio	Total gross loan debt as a percentage of GDP
	Interest-to-revenue ratio	Interest expenditure divided by total revenue
	Primary budget balance	Primary balance as a percentage of GDP
External vulnerabilities partition		
Global financial cycle	US financial conditions	Federal Reserve Board and/or Chicago Fed indices
Real effective exchange rate (REER)	REER	REER of the rand: average for the period – 20 trading partners – trade in manufactured goods
Capital flows	Net portfolio purchases by non-resident investors	Total net purchases of shares and bonds (repo and outright) by non-residents on the JSE

Annexure B: Banking and insurance sector indicators

Table B.1: Banking sector indicators*

	2020	2021	2022	2023	2024	2025
Market share in terms of assets (five largest banks)	89.99	89.85	91.04	92.29	92.35	92.34
Gini concentration index	83.11	82.50	81.88	80.89	80.16	79.96
Herfindahl-Hirschman Index (H-index)	0.176	0.178	0.179	0.179	0.180	0.180
Total assets (R billions)	6 457.3	6 562.3	7 019.7	7 489.9	7 897.3	8 083.5
- Year-on-year percentage change	11.93	1.74	6.96	6.77	5.33	6.37
Total loans and advances (R billions)	4 542.5	4 643.1	4 984.0	5 349.9	5 633.9	5 777.0
- Year-on-year percentage change	6.90	2.24	7.33	7.40	5.28	5.59
Total capital adequacy ratio	16.21	17.49	17.68	17.36	17.19	17.22
Tier 1 capital adequacy ratio	13.14	14.47	14.96	15.01	14.99	14.91
Common equity tier 1 capital adequacy ratio	12.33	13.30	13.63	13.43	13.29	13.23
Impaired advances (R billions)**	211.9	229.2	226.7	276.8	300.7	304.5
Impaired advances to gross loans and advances	4.7	4.9	4.5	5.2	5.3	5.3
Specific credit impairments (R billions)	92.2	105.5	109.7	127.2	141.2	144.4
Specific credit impairments to impaired advances	43.56	46.07	48.45	45.98	46.97	47.42
Specific credit impairments to gross loans and advances	2.03	2.30	2.20	2.38	2.51	2.50
Return on assets (smoothed)	0.79	0.81	1.12	1.11	1.13	1.16
Return on equity (smoothed)	10.22	10.62	14.25	14.84	15.17	15.56
Interest margin to gross income (smoothed)	58.17	58.65	58.76	60.09	60.44	59.87
Operating expenses to gross income (smoothed)	58.26	58.73	58.08	56.60	56.88	56.84
Liquid assets to total assets (liquid asset ratio)	12.2	13.3	14.0	15.0	15.1	15.6
Liquid assets to short-term liabilities	24.1	24.1	25.2	27.5	27.4	27.8
Liquidity coverage ratio	142.2	144.1	145.4	150.6	148.8	148.8

* Updated as at 26 May 2025. All data is averaged for the year shown. Data is in percentages unless stated otherwise.

** Impaired advances are advances in respect of which a bank has raised a specific impairment and include any advance or restructured credit exposure subject to amended terms, conditions and/or concessions that are not formalised in writing.

*** 2025 is year to date (to March 2025).

Source: PA

Table B.2: Insurance sector indicators

	2020	2021	2022	2023	2024
Market share in terms of assets (five largest life insurers)	73	73	74	71	71
Market share in terms of gross written premiums (five largest non-life insurers)	47	50	49	45	47
Balance sheet					
Total assets: life insurers (R millions)	3 254 815	3 724 257	3 705 455	4 115 321	4 569 733
Total assets: non-life insurers (R millions)	239 132	260 616	290 127	308 317	336 127
Total liabilities: life insurers (R millions)	2 909 562	3 343 586	3 353 525	3 722 862	4 162 133
Total liabilities: non-life insurers (R millions)	141 422	178 516	121 541	121 502	118 019
Profitability					
Gross written premiums: life insurers (R millions)	564 327	620 821	631 629	681 055	722 296
Net profit before tax and dividends: life insurers (R millions)	11 766	48 731	19 848	28 499	26 007
Individual lapse ratio: life insurers	6.06	77.0	76.0	64.0	55.0
Gross written premiums: non-life insurers (R millions)	158 632	169 846	181 916	210 291	227 437
Combined ratio: non-life insurers (%)	113.0	119.0	98.0	101.0	95.0
Operating profit ratio: non-life insurers (%)	16.0	-14.0	14.0	27.0	22.0
Solvency and capital					
Solvency capital requirement cover ratio (median): life insurers	1.9	1.7	1.7	1.9	1.8
Minimum capital requirement cover ratio (median): life insurers	4.3	4.2	4.7	4.9	4.9
Solvency capital requirement cover ratio (median): non-life insurers	1.9	1.8	1.5	1.7	1.8
Minimum capital requirement cover ratio (median): non-life insurers	4.4	3.8	3.7	4.3	4.2

Source: PA

Abbreviations

AGOA	African Growth and Opportunity Act
Alsi	JSE All-Share Index
AML/CFT	anti-money laundering/combating the financing of terrorism
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BoC	Bank of Canada
BU	bottom-up
CAR	capital adequacy ratio
CBOE	Chicago Board Options Exchange
CCyB	countercyclical capital buffer
CDS	credit default swap
CET1	common equity tier 1
CGE	computable general equilibrium
CODI	Corporation for Deposit Insurance
COVID-19	coronavirus disease 2019
CRST	Climate Risk Stress Test
EBIT	earnings before interest and taxes
ECDF	empirical cumulative distribution function
EM FX	Emerging Market Foreign Currency Volatility Index
EU	European Union
FATF	Financial Action Task Force
FCI	Financial Conditions Index
FMI	financial market infrastructure
FNB	First National Bank
forex	foreign exchange
FSC	Financial Stability Committee
FSCA	Financial Sector Conduct Authority
FSCF	Financial Sector Contingency Forum
FSOC	Financial Stability Oversight Committee
FSR	*Financial Stability Review*
FSR Act	Financial Sector Regulation Act 9 of 2017
FX	foreign currency
G7 FX	Group of Seven Foreign Currency Volatility Index
GDP	gross domestic product
GNU	Government of National Unity
GWh	gigawatt hours
H-index	Herfindahl–Hirschman Index
HP	Hodrick–Prescott
HQLA	high-quality liquid assets
ICR	interest coverage ratio
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
JSE	Johannesburg Stock Exchange
LGD	loss given default
MOVE	Merrill Lynch Option Volatility Estimate
MPIF	monetary policy implementation framework
MPR	*Monetary Policy Review*
MTBPS	*Medium Term Budget Policy Statement*
NBFI	non-bank financial institution
NERSA	National Energy Regulator of South Africa
NFC	non-financial corporate

NGFS	Network for Greening the Financial System
NIESR	National Institute of Economic and Social Research
NiGEM	National Institute Global Econometric Model
NPL	non-performing loan
NYU	New York University
OCARM	Orderly Closing and Reopening of Markets
OFI	other financial institution
PA	Prudential Authority
PCN	positive cycle-neutral
PD	probability of default
PEM	Payments Ecosystem Modernisation
PFMI	Principles for Financial Market Infrastructures
R	rand
REER	real effective exchange rate
repo (rate)	repurchase (rate)
rhs	right-hand scale
RVM	Residual Vulnerability Matrix
RWA	risk-weighted assets
SARB	South African Reserve Bank
SARS	South African Revenue Service
SCR	solvency capital requirement
SIC	Standard Industrial Classification
SIFI	systemically important financial institution
SME	small- and medium-sized enterprise
SOE	state-owned enterprise
SRISK	systemic risk
TCFD	Taskforce on Climate–Related Financial Disclosure
TD	top-down
UK	United Kingdom
UNEP-FI	United Nations Environment Programme Finance Initiative
US	United States
VIX	Volatility Index
VIX EM	Volatility Index Emerging Market

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