FINANCIAL STABILITY REVIEW

Second edition
2020

SOUTH AFRICAN RESERVE BANK

The data and information used in this *Financial Stability Review* covers the period up to 1 October 2020. Therefore, the majority of quarterly data in this edition end at the second quarter of 2020, the majority of monthly data end at August 2020 and the majority of daily data end at 30 September 2020. Data may include own calculations made specifically for the purposes of this publication. The graph data used in this publication can be downloaded from the SARB website.

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Illustrative summary

South Africa's financial system has demonstrated its resilience in the face of an unprecedented shock, but risks remain.

The initial shock of COVID-19 caused financial market dysfunction and sharp asset price declines.

While market functioning has normalised, the economy has fallen into a deep recession.

Banks have restructured large amounts of credit, providing temporary relief to borrowers.

Solvency challenges are set to increase amid elevated debt levels and pressure on incomes...

... but stress tests indicate that the banking sector will remain adequately capitalised.

The economic outlook is highly uncertain and will be contingent on the path of the virus.

Financial stability is expected to remain intact despite the challenging environment.

The purpose of the *Financial Stability Review*

The primary objective of the South African Reserve Bank (SARB) is to protect the value of the local currency in the interest of balanced and sustainable economic growth in South Africa. In addition to this, the SARB's function and mandate of protecting and enhancing financial stability in the Republic of South Africa is affirmed in the Financial Sector Regulation Act 9 of 2017 (FSR Act).

In pursuit of its financial stability mandate, and to promote a stable financial system, the SARB publishes the *Financial Stability Review* (*FSR*) twice a year. The publication aims to identify and analyse potential risks to financial system stability, communicate such assessments, and stimulate debate on pertinent issues. The SARB recognises that it is not the sole custodian of financial stability, but that it coordinates and contributes significantly towards a larger effort involving government, other regulators, self-regulatory agencies, organs of state and financial market participants. In line with the requirements of the FSR Act, both the Minister of Finance and the Financial Sector Oversight Committee (FSOC) provide comments on the *FSR* prior to publication.

Defining 'financial stability'

'Financial stability' refers to a financial system that espouses confidence through its resilience to systemic risks and its ability to efficiently intermediate funds.

Financial stability is not an end in itself, but is regarded as an important precondition for sustainable economic growth and employment creation.

Executive summary

Despite a challenging backdrop, financial stability is expected to remain intact. The emergence of the coronavirus (COVID-19) pandemic has dramatically worsened the economic outlook and led to financial market dislocations in the first half of 2020. However, the financial system has continued to function effectively and financial markets have since stabilised. Notwithstanding the significant risks that the financial system currently faces, financial stability is expected to remain intact.

In response to COVID-19, the SARB and government have put in place various measures to support the economy and ensure continued access to credit. Policy adjustments have assisted banks in providing loan repayment holidays to firms and households covering more than R600 billion in credit agreements. Access to credit has also been supported by a loan guarantee scheme and easier regulatory requirements on the banking sector. The aim of the SARB's regulatory and policy adjustments has been to reduce pressure on the economy, while avoiding unnecessary foreclosures on otherwise financially sound borrowers who were affected by COVID-19 and the associated containment measures.

The banking sector has built-up significant capital and liquidity buffers over the past decade. As a result of enhancements to financial regulation, domestic banks have become significantly more resilient, placing them in a strong position leading into the COVID-19 shock. With these large buffers in place, the SARB has been able to provide temporary regulatory relief to banks without compromising on the longer term stability of the financial sector.

The SARB has acted to ensure the orderly functioning of financial markets. By making additional funds available to the banking sector and through government bond purchases, the SARB has contributed to a return to more normal financial market conditions in recent months. This follows a period of heightened volatility and signs of market dysfunction, which emerged in March 2020. The SARB's actions have occurred alongside policy interventions from central banks and governments across the world, which have bolstered confidence and liquidity in global financial markets.

The initial phase of the COVID-19 shock appears to have passed, but risks relating to the solvency of borrowers remain. Policy actions have helped to avoid a sharp contraction in the availability of funding across various markets. But risks are now shifting towards more fundamental solvency problems as an increasing number of borrowers, particularly in the household sector, are falling behind on their loan repayments. These solvency risks could intensify over the coming months as relief measures taken by government and commercial banks begin to subside. A second wave of COVID-19 infections is also possible, which could further dent economic activity and incomes.

South Africa's systemically important banks[1] are expected to remain adequately capitalised, even in the face of a downside scenario. In this edition of the *FSR*, the results of a solvency stress test undertaken on South Africa's six largest banks are presented. The findings suggest that further increases in banks' non-performing loans will be likely over the coming months. But, even under a more severe macroeconomic downturn than is currently projected, these banks are expected to maintain an aggregate level of capital above the minimum regulatory requirement.

The scars of COVID-19 will persist for years to come. Both the financial sector and the economy at large will take years to recover from the costs imposed by the pandemic. Government debt will also be significantly higher than at any time in South Africa's post-World War II history. This implies that the economy will be more vulnerable to future shocks and that the policy tools available to address these shocks could be more limited.

1 The SARB Governor has designated six large banking groups as systemically important financial institutions (SIFIs) – please refer to the 2019 second edition of the Financial Stability Review for further information.

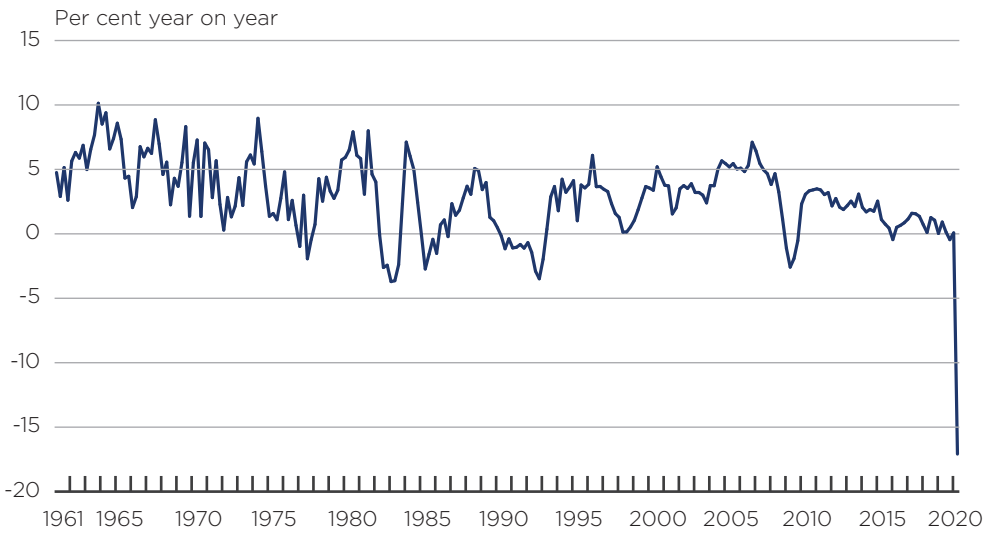
Chapter 1: Financial stability risks and system resilience

Risk assessment

The global financial stability outlook has improved, but vulnerabilities remain. An unprecedented global policy response to the COVID-19 pandemic (and its economic effects) has helped to stabilise financial markets and contain the near-term risk of a global financial crisis. However, there remains a high degree of uncertainty regarding the pace and durability of the economic recovery in both advanced and emerging economies. As a result, many borrowers (both private and public) are susceptible to solvency risk, which could have adverse spillovers onto the international financial system. Geopolitical tensions, trade disputes as well as the future path of COVID-19 are key risks which could hamper the nascent global economic recovery.

The magnitude of the current domestic economic downturn is difficult to overstate, but signs of a rebound are emerging. In the second quarter of 2020 South Africa's gross domestic product (GDP) contracted by 17.1% year-on-year (y/y), an outcome unparalleled over the past half century (see Figure 1). This massive shock to the economy was broad-based across sectors and was driven largely by the effects of COVID-19 and the measures taken to contain it. Encouragingly, signs of an economic recovery are emerging as lockdown restrictions have been gradually eased in recent months, allowing most business activities to resume. Nevertheless, the SARB's current forecast suggests that it is likely to take at least three years for the economy to recover to pre-COVID output levels.

Figure 1: Quarterly real GDP growth



Source: SARB

Despite the economy being in recession, credit growth has continued amid efforts to support lending. Given the quantum and speed of the COVID-19 shock, there was a risk that credit availability would fall sharply on the back of heightened risk aversion. Such an outcome would seriously constrain an economic recovery from the current recession. A concerted effort from the financial sector, supported by various policy actions[2], has helped to avoid a credit crunch. Consequently, growth in private sector credit extension has remained positive despite slowing significantly since March 2020 (see Figure 2).

Figure 2: Private sector credit extension

Source: SARB

The banking sector has restructured loans on a large scale, providing a bridge to recovery. With the gross value of restructured loans accounting for roughly one sixth of all private credit extension, banks have provided relief to more than 30 000 firms and 1.7 million consumers. As lockdowns to economic activity resulted in temporary business closures and job furloughs, the authorities were concerned that widespread foreclosures could turn a transitory shock into a permanent loss of income for many. Thus, regulations were temporarily changed to allow banks to restructure credit without the usual requirement to hold additional capital against these restructured loans. This adjustment was important in facilitating the restructures that took place while ensuring that banks retain the regulatory capital necessary to continue lending. Bank capital buffers have increased substantially over the past decade, which has enabled the provision of regulatory relief without risking the long-term solvency of the sector.[3] The extent to which the restructured

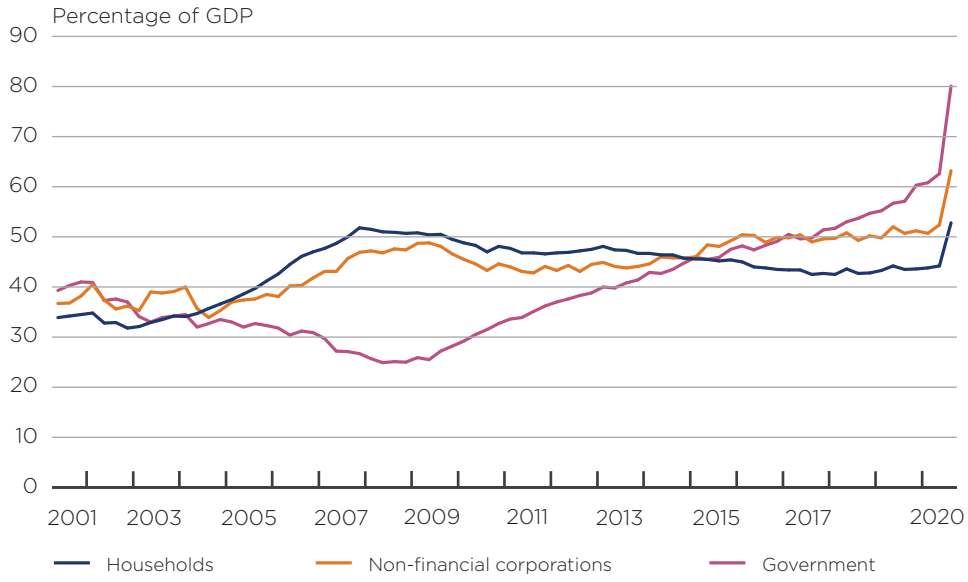
2 These policy actions are discussed in detail in a later section of Chapter 1 in this document.

3 See Chapter 2 of the *FSR 2020 First Edition* for further details around how the banking sector has been made more resilient over the past decade.

loans will eventually be repaid remains unclear,[4] but the banking sector has significantly increased its provisioning in recent months to account for expected future credit losses.

Private sector debt has been stable in recent years, while public debt has increased rapidly. Measured as a share of GDP, both private sector and public debt jumped in the second quarter of 2020 to very elevated levels (see Figure 3). This largely reflects the sharp drop in GDP experienced during the quarter, although public debt increased substantially in response to the COVID-19 shock. Nevertheless, both household and non-financial corporate debt has remained broadly stable relative to GDP over the four years preceding 2020. Government debt, on the other hand, has grown rapidly and consistently for more than a decade and is set to continue increasing.

Figure 3: Debt levels in the domestic economy



Note: non-financial corporate debt in this chart includes bank credit as well as domestic and internationally issued debt securities. The data for debt securities outstanding in the second quarter of 2020 was unavailable at the time of writing, so it has been assumed that the value of debt securities outstanding remained at the same level as the first quarter of 2020.

Source: BIS and SARB

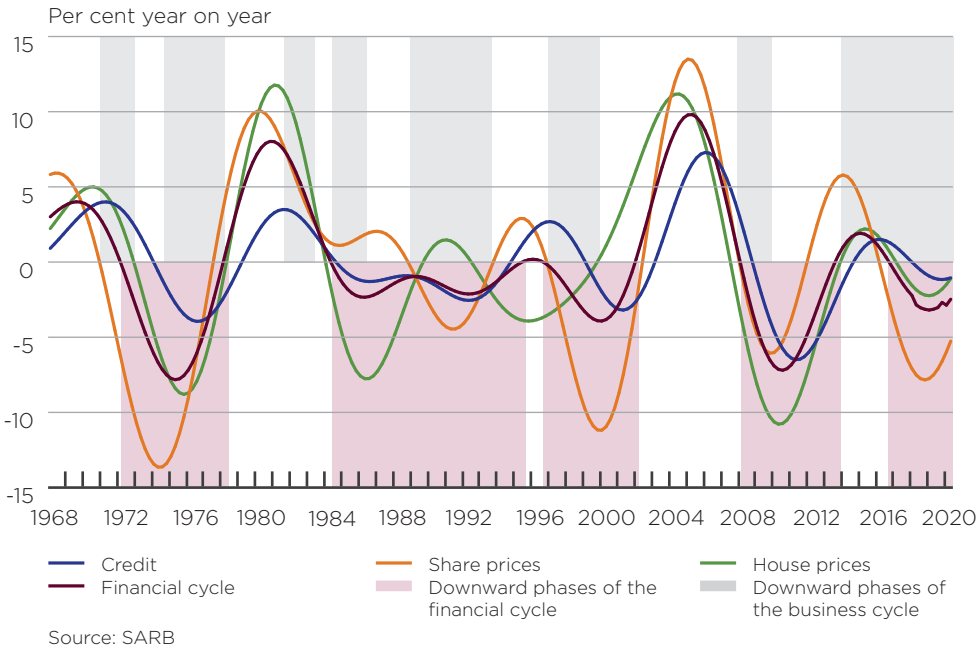
The financial cycle remains in a downward phase. The financial cycle is measured by the co-movement of a set of financial variables, including private sector credit growth, real estate price growth and equity price growth. Upward phases of the financial cycle are typically associated with rising financial stability risk.[5] The fact that the financial cycle has remained in a downward phase since late 2016 is an indication that asset price growth and broader risk taking in the financial sector has been relatively muted by historical standards. This financial

4 It is important to note that restructures were only provided to entities that were up to date on their loans prior to the emergence of COVID-19 and that are expected to be able to repay their loans.

5 This is because increases in asset price and credit growth can become self-reinforcing. As collateral values rise, more credit is extended, which drives up incomes and makes debt service easier. This can result in a financial boom. The literature confirms that these booms are often followed by a financial crisis or a period of lower economic growth as the increased indebtedness of the boom phase is gradually repaid.

cycle downturn coincides with the longest business cycle downturn on record, underscoring the broad-based weakness of the economy entering the COVID-19 shock (see Figure 4). Prior to the sharp drop in second quarter GDP, the private sector credit-to-GDP gap[6] was near zero, further supporting the view that recent credit extension to the private sector has not been excessive.

Figure 4: The South African financial cycle



Source: SARB

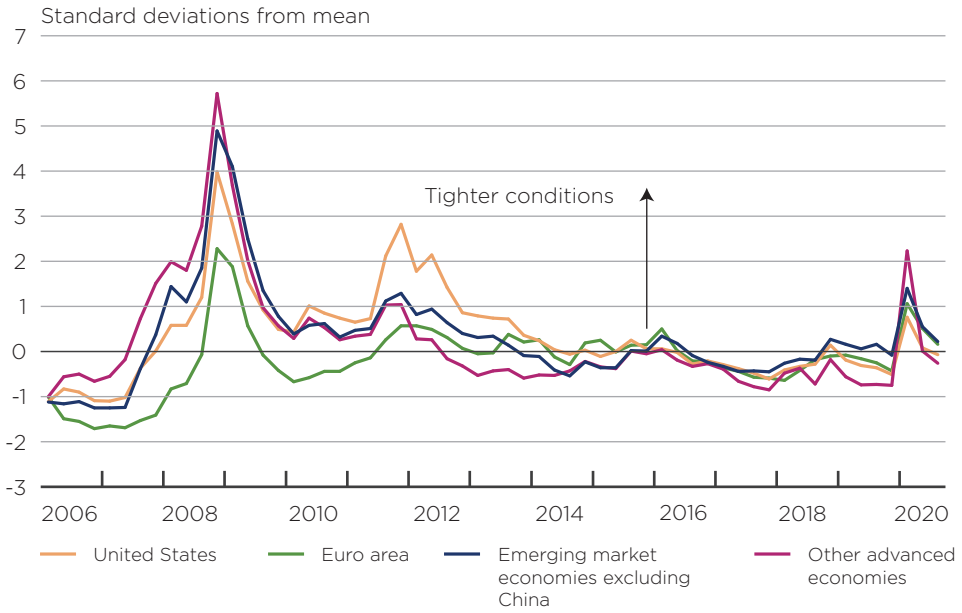
Financial conditions, both domestically and internationally, have eased in recent months, but local government bond yields are still elevated. Global financing conditions tightened sharply during March and April of this year as higher risk borrowers in financial markets faced increased funding spreads over risk-free assets (see Figure 5). Conditions have since eased as various financial asset prices have recovered (albeit only partially in many cases). However, longer term domestic government bond yields have remained elevated. As shorter term yields have declined, in line with a lower repo rate, the yield curve is near its steepest level on record.[7] The spread between domestic and United States (US) long-term bond yields is also at historically high levels. This indicates that the recent repo rate reductions as well as the sharp drop in advanced economy interest rates have not fully passed through to yields on longer maturity domestic debt. Recent research suggests that this is being driven, in part, by heightened fiscal risk.[8]

6 The credit-to-GDP gap is defined as the difference between the credit-to-GDP ratio and its long-term trend. A positive gap indicates that credit is growing faster than its longer term trend.

7 The yield curve steepness is calculated by subtracting the average yield on government debt of a maturity over 10 years from the average yield on government debt of a maturity of between 0 and 3 years, and is based on monthly average data. See the government section in Chapter 3 for further details.

8 Fedderke, J. 2020. The South African – United States Sovereign Bond Spread and its Association with Macroeconomic Fundamentals. SARB Working Paper 20/09. Available from: https://www.resbank.co.za/Publications/Detail-Item-View/Pages/Publications.aspx?sarbweb=3b6aa07d-92ab-441f-b7bf-bb7dfb1bedb4&sarblist=21b5222e-7125-4e55-bb65-56fd3333371e&sarbitem=10142

Figure 5: Financial conditions indices for various regions

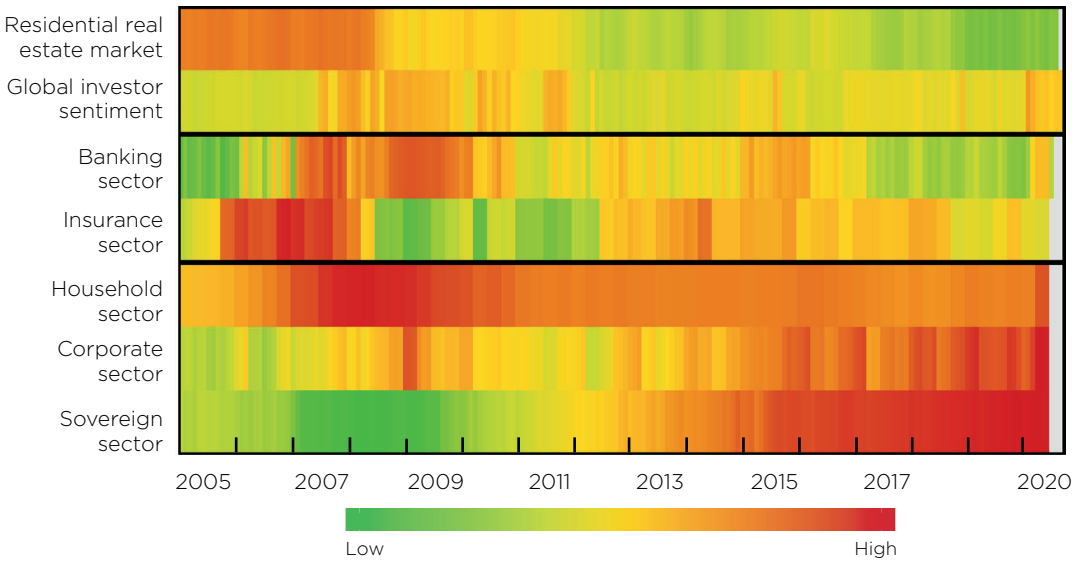


Source: IMF

The financial stability heat map provides a visual depiction of the financial risks faced by various sectors of the domestic economy. The heat map provides an easy-to-interpret overview of the evolution of risk over time. Various indicators are used as inputs into each sector's mapping, and colours reflect current levels of risk relative to a particular indicator's long-term average.[9] The non-financial sector as a whole has experienced rising financial risk for a number of years – linked to its relatively high debt-to-GDP ratios and pressure on earnings – which has been accentuated by COVID-19. These vulnerabilities are less apparent in the financial sector as financial firms have maintained high solvency and liquidity buffers. The real estate market is showing low levels of risk due to muted house price growth in recent years as well as the fact that mortgage loans have declined as a share of total private credit over the past decade. Nevertheless, the real estate market could be a source of risk over the coming months as the largest share of credit restructures, due to COVID-19, were for mortgage loans (something which is not captured in the heat map).

9 For further details on how the heat map is constructed see the *FSR First Edition 2020*.

Figure 6: Financial stability heat map



Source: SARB

Box 1: The South African Reserve Bank's systemic risk assessment and macroprudential policy frameworks

The South African Reserve Bank (SARB), in pursuit of its financial stability mandate, has a framework in place for systemic risk[1] assessment. Monitoring systemic risk is required for macroprudential policymaking. Since the 2007/08 global financial crisis, there has been a growing consensus that macroprudential policy frameworks are needed to address the build-up of systemic risk in the financial system. The Financial Sector Regulation Act 9 of 2017 assigns responsibility to the SARB for monitoring financial stability risks and taking steps to mitigate systemic risk.

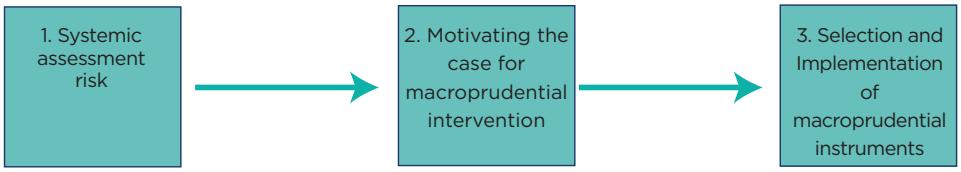
The SARB's assessment of systemic risk focuses on identifying structural[2] and cyclical[3] vulnerabilities within the economy that could amplify and propagate negative economic events. The macroprudential policy framework makes provision for the use of macroprudential instruments to limit various aspects of systemic risk. Three key steps can be identified in the macroprudential policy process leading up to the activation of macroprudential instruments (see Figure 7).

1 Systemic risk is defined as the danger of a failure or disruption of the whole or a substantial part of the financial system. Systemic risks are usually divided into cyclical and structural risks. The term systemic risk is used interchangeably with financial stability risk in this document.

2 Structural risks relate to the distribution of aggregate risk across the financial system at a point in time and refer to the direct and indirect linkages across the financial system. The effect of adverse aggregate shocks can be amplified through contagion, moral hazard and the opacity and complexity of financial institutions, markets and products.

3 Cyclical risks relate to the evolution of total risk in the financial system over time and the tendency of financial firms, companies and households to engage in excessive risk taking during the upswing of credit cycles and then to become excessively risk-averse during the downswing. This cyclical risk can amplify the effect of adverse aggregate events because of the interactions between excessive credit growth, asset price bubbles, leverage and maturity mismatches.

Figure 7: The three-step process of the SARB's systemic risk assessment framework



The first step towards systemic risk assessment is to design a monitoring framework. The SARB's monitoring framework is broadly based on the International Monetary Fund (IMF) and the Federal Reserve Board (Fed) frameworks.[4] The SARB's assessment of risk covers global developments, asset markets, systemically important financial institutions (SIFIs), non-bank financial intermediaries and the non-financial sector. Other key indicators that act as early warning signals of systemic risk include, among others, the heat map, the credit-to-GDP gap, the financial cycle, the financial conditions index, growth at risk (GaR) and the systemic risk contribution of individual financial firms (known as SRISK). A systemic risk assessment matrix (RAM) is presented to the Financial Stability Committee (FSC) each quarter, and many of the indicators are published in the *Financial Stability Review* (*FSR*).

The second step towards systemic risk assessment is to determine whether there is a case for macroprudential intervention. There needs to be a consideration of whether systemic risk across the financial system would deepen if it remained unattended. The global financial crisis demonstrated that traditional microprudential policy on its own is not sufficient to guarantee the stability of the financial system. The case for macroprudential intervention will also have to take into consideration:

i. the potential cost relative to the expected benefits of the intervention;
ii. that inactivity may also have costs;
iii. the possible trade-off between missing the build-up of risk and implementing measures that are not needed; and
iv. the appropriate timing of an intervention.

The third step towards systemic risk assessment is to select and implement macroprudential instruments. Macroprudential instruments are policy tools that target the sources of systemic risk. These include liquidity and maturity mismatches, leverage or interconnectedness, among others. The selection and implementation of these instruments is guided by three main criteria, namely; effectiveness, efficiency and transparency of the instruments. Firstly, the effective implementation of macroprudential instruments requires an in-depth understanding of the relevant transmission mechanisms. Secondly, the efficiency of the instruments will be evaluated by their ability to avoid unintended consequences and adverse effects when meeting their objectives. Thirdly, transparent decision-making and actions will enhance the understanding, ease of communication and administration of macroprudential policies. An important consideration in the macroprudential policy framework is to assess the effectiveness of macroprudential instruments (once deployed) to safeguard longer-term financial stability and economic performance. In particular, the structural nature of a country's financial system, the stage of financial development and the degree of openness are key factors that could affect policy interventions through possible leakage effects. Research in this area is ongoing

4 As part of its international benchmarking exercise, the SARB also takes into consideration other financial stability monitoring frameworks such as the Bank of England, RiksBank, and so on.

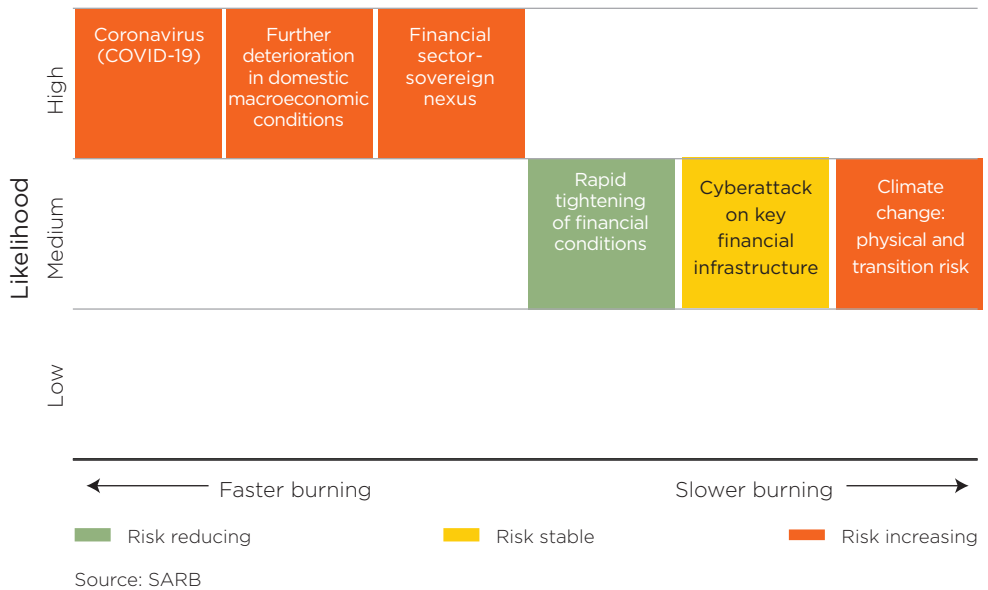
and will gain increased prominence as the SARB develops its macroprudential toolkit of instruments.

Macroprudential instruments are generally classified into three categories.[5] These are capital-based instruments (e.g. countercyclical capital buffers, sectoral capital requirements and dynamic provisions); asset-side instruments (e.g. loan-to-value (LTV) and debt-to-income (DTI) ratio caps); and liquidity-based instruments (e.g. countercyclical liquidity requirements).

The SARB's systemic risk assessment and macroprudential policy frameworks will continue to evolve as risks vary over time and circumstances change. Regardless of the type of instruments, macroprudential policy cannot rely solely on a fixed set of rules, but must be based on a continuous assessment of risks and is best supported by guided discretion. Key indicators help to signal when intervention or adjustments may be appropriate, but they may also provide false signals. Hence, indicators need to be interpreted with caution and the decision to intervene will be based on informed judgment. Once the decision to deploy a tool has been taken, the tool must be ready to use. Therefore, various macroprudential tools are currently being operationalised to ensure that they can be deployed as and when they are required.

The SARB's risk assessment matrix (RAM) captures the primary risks to financial stability over a medium-term horizon. These risks are identified using quantitative indicators as well as a qualitative assessment by the Financial Stability Committee of the SARB. The RAM continues to display an unusually large number of high-likelihood risks, reflecting the challenging environment that the financial sector faces. Each of the risks in the RAM is briefly discussed below.

Figure 8: Risk assessment matrix

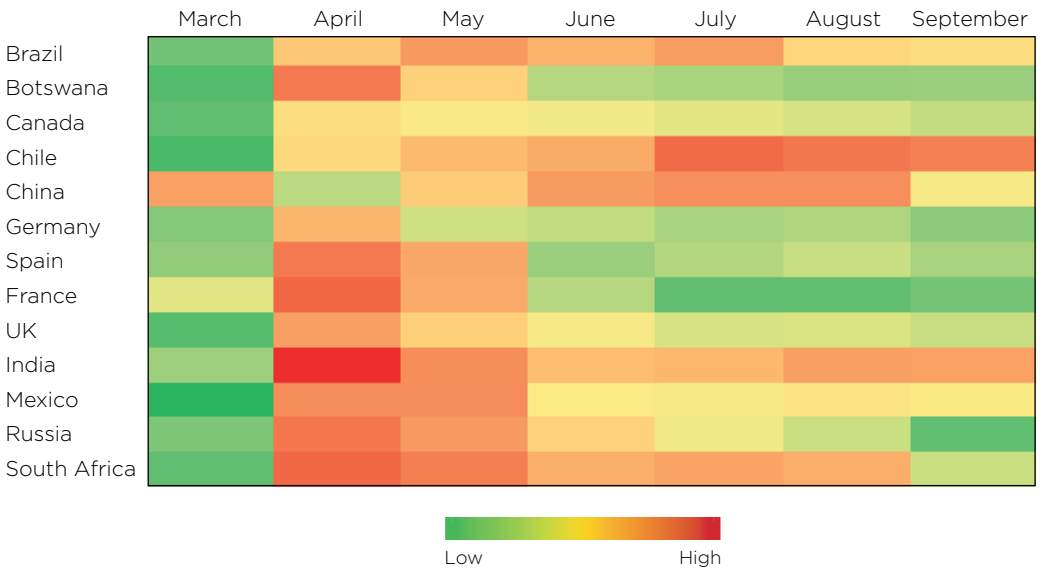


Source: SARB

COVID-19

COVID-19 is likely to remain the primary risk to financial stability over the near term. The impact of the pandemic on financial stability is likely to play out over at least two phases. Phase one occurred during the first half of this year. This was characterised by a large capital flow shock, financial market dysfunction,[10] a flight to cash by institutional investors and a sharp drop in economic activity (resulting from the strictness of the levels 5 and 4 lockdown and associated income losses). Financial market volatility and dysfunction have started to subside, in part due to aggressive policy measures from the SARB, National Treasury (NT) and other authorities globally. The gradual reopening of the domestic and global economy has supported an uptick in economic activity in recent months (see Figure 9).

Figure 9: COVID-19 Lockdown Stringency Index



Sources: Hale, Thomas, Sam Webster, Anna Petherick, Toby Phillips and Beatriz Kira (2020). Oxford COVID-19 Government Response Tracker, Blavatnik School of Government.

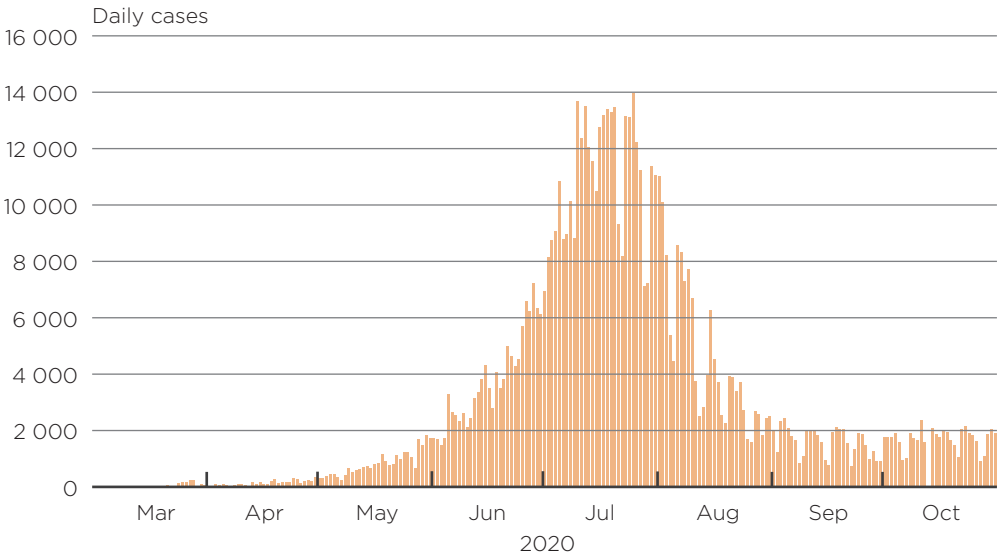
Currently, a transition is underway towards the second phase of the COVID-19 shock, which will continue into 2021. This phase is characterised by a transition from liquidity to solvency challenges for households and firms. Following the disruptions to economic activity, business closures and large scale job losses experienced in the second quarter of 2020 (exceeding 2 million jobs), a sharp rise in non-performing loans (NPL)[11] and insurance policy lapse rates is being experienced by financial institutions. This, in turn, is putting the profitability and capital positions of financial firms under pressure. The additional solvency challenges faced by smaller banks that were making loss before the pandemic has increased their risk of failure.

10 Dysfunction refers to a situation in which markets may be close to, or are already, functioning ineffectively to match buyers and sellers. It may also refer to a rapid drop in liquidity in a particular market, resulting in sharp price moves and lower trading volumes.

11 An NPL is defined as a loan that is 90-days or more overdue.

While the rate of new COVID-19 infections has slowed since July, there is a possibility of a second wave. Many countries have experienced a resurgence in infections following an easing of lockdown restrictions. If this were to be the case in South Africa, new lockdown measures could be required, placing additional strain on the economy and financial sector.

Figure 10: New COVID-19 cases in South Africa

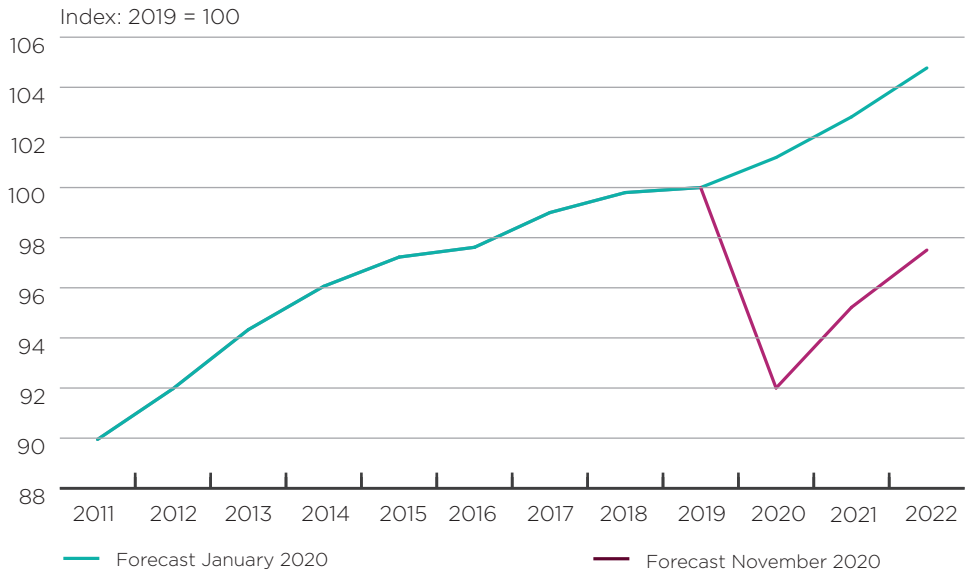


Source: NICD, Our World in Data

A further deterioration in domestic macroeconomic conditions

Despite large downward revisions to the GDP growth forecast in 2020, further downside risks could still materialise. In its September 2020 forecast, the SARB projected a GDP growth contraction of 8% in 2020, with a recovery to a positive rate of growth equal to 3.5% in 2021 and 2.4% in 2022. This would make 2020's outcome by far the worst in South Africa's post-World War II history. The SARB's projection sees only a partial rebound in economic activity, with the level of real GDP in 2022 still below that of 2017. Moreover, economic output in 2022 is expected to be nearly 7% lower than the forecast undertaken prior to COVID-19 becoming widespread in January 2020 (see Figure 11). With such heightened pressure on the economy, the profitability of financial firms will be significantly lower, not just in 2020, but over the medium term as well (relative to a pre-COVID-19 scenario). Profits are a key source of loss absorbing capital for the banking sector. Thus, lower profitability implies that the sector could be less resilient to future shocks.

Figure 11: SARB forecast for the level of real GDP



Source: SARB

Recent research suggests that pandemics tend to place downward pressure on economic growth and interest rates over the long run.[12] There is a significant risk that COVID-19 could depress investment and drive up the degree of precautionary saving as households and firms attempt to rebuild wealth depleted by the effects of the pandemic. Furthermore, the fact that the economy is not expected to recover to previous levels of output over the medium term (much less recover to its previous trend) raises the risk that economic capacity could be permanently damaged. Given the weak growth outlook, the most recent SARB forecast suggests that the repo rate is likely to remain well below its 2019 level over the medium term (although it is projected to increase gradually). A low level of interest rates has supported the debt service capacity of borrowers, but it may weigh on the net interest margin of banks, particularly if it persists in an environment of muted economic activity.[13]

Financial sector-sovereign nexus

Public debt is set to rise sharply over the medium term. Based on NT's Medium Term Budget Policy Statement released in October, public debt is expected to reach 82% of GDP in the current fiscal year, and to stabilise at 95% in 2026. This is a substantial upward revision from the projected stabilisation of debt at 60% of GDP as recently as the 2019 National Budget. Budget deficits for the fiscal years ending in 2021 and 2022 are projected at 15.7% and 10.1% of GDP respectively. This places South Africa's near term public sector funding requirements among the largest of its peers in emerging markets (as a share of GDP). Government also faces significant execution

12 Jordà, O., S. Singh and A. Taylor (2020), 'Longer-run economic consequences of pandemics', NBER Working Paper no. 26934.

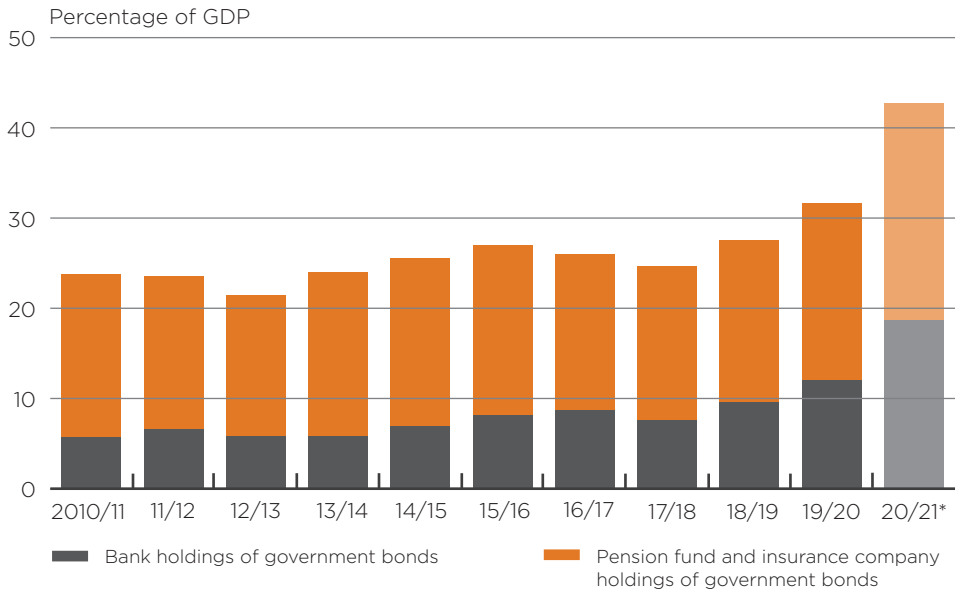
13 As commercial banks source a significant share of their deposits through non-interest bearing accounts (such as cheque accounts), a lower prime lending rate tends to narrow the margin between lending and deposit interest rates.

risk in stabilising debt, including implementing approximately R300 billion in spending reductions over the next three years relative to the 2020 National Budget projection. National Treasury itself has indicated that, if the planned fiscal consolidation is unsuccessful, government could face debt distress with adverse implications for the broader economy.[14]

The interconnectedness between the financial sector and the sovereign has emerged as a major threat to financial stability in South Africa. The SARB has identified four channels through which this threat could play out.

The first is the sovereign exposure channel, which refers to the fact that domestic financial intermediaries are large holders of sovereign debt. Domestic banks account for approximately 23% of total government bond holdings, while pension funds together with insurers account for a further 29% of holdings. Consequently, the deterioration in public finances has adverse effects on the perceived creditworthiness of financial institutions themselves. This is most clearly demonstrated by the fact that domestic commercial bank credit ratings are currently pegged to that of the sovereign (in part due to the large holdings of government bonds on bank balance sheets). This channel also poses risks to the government because, if domestic financial institutions face stresses which force them to reduce their lending, government may face challenges in funding itself.

Figure 12: The domestic financial sector's exposure to government debt



* The 2020/21 data is based on NT's government debt forecast and the assumption that the share of government bonds held by domestic banks, pension funds and insurance companies remains stable at the September 2020 level and is representative of their total government debt holdings.

Sources: NT and SARB

14 See http://www.treasury.gov.za/publications/guidelines/2021%20MTEF%20guidelines.pdf

The second channel of the nexus refers to government's role in acting as a backstop in the event of financial sector distress. Governments across the world have often acted to support banks or their depositors in the event that a bank faces solvency problems. This implicit backstop affects how investors and depositors view risk in the banking sector. However, government's current financial position may place the credibility of a fiscal backstop to the financial sector in question, with adverse implications for bank funding costs. This could also raise the risk of bank runs and financial contagion if the banking sector faces solvency challenges. Likewise, if government were to provide financial support to a bank, it would put government's financial position under further strain. This channel is exacerbated by the fact that South Africa does not currently have a deposit insurance framework in place, which increases reliance on the public sector to support depositors in the event of a bank failure.

The macroeconomic channel, which is the third channel of the nexus captures the reality that both financial intermediaries and government are affected by, and significantly influence, macroeconomic developments. The current economic downturn has placed substantial pressure on the fiscus, creating the need for a growth friendly fiscal consolidation. However, should the financial sector experience stress and be forced to reduce the supply of credit to the economy, this could weigh on economic activity and constrain the tax revenue of government. Thus, the efficacy of a fiscal consolidation will be contingent on the state of the economy and the health of the broader financial sector.

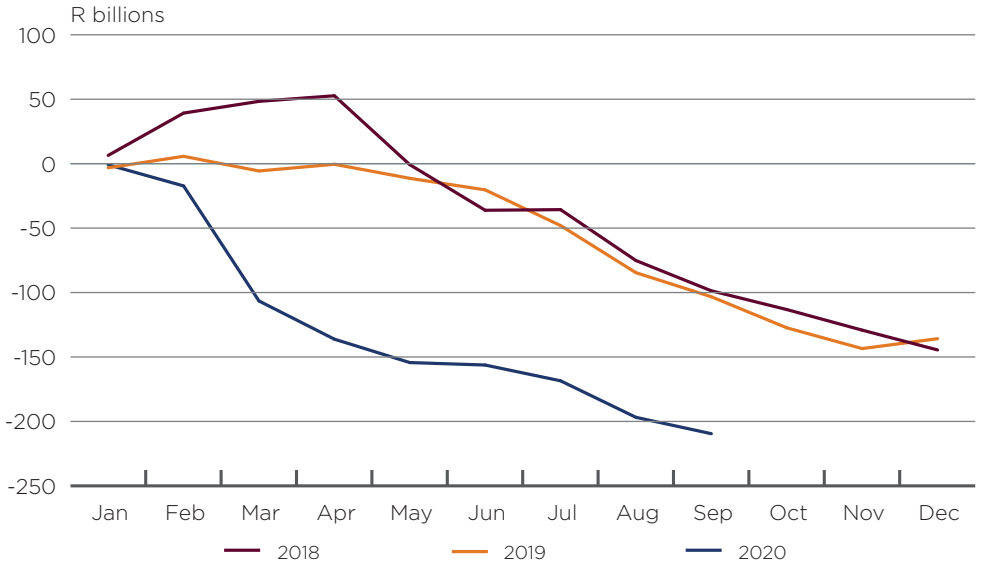
The fourth channel of the nexus refers to the fact that government borrowing costs are important reference interest rates in the economy. Government's borrowing costs are often referred to as a risk-free rate with other borrowers in domestic capital markets tending to pay a premium over a similar maturity government bond. Therefore, as government's longer term borrowing costs have remained relatively high (despite recent repo rate reductions), so too have the borrowing costs of private sector bond issuers. Elevated risk-free rate may also affect the attractiveness of investments undertaken by firms and investors, as a common approach to estimating the value of an investment is to discount the expected future cash flows from the investment using a market-based interest rate (which is usually linked to the risk-free rate). The higher the interest rate, the lower the future value of a given level of cash flows. Thus, elevated government borrowing costs constrain private investment and raise the overall cost of borrowing in the economy.

All four of the aforementioned nexus channels currently pose risks to the financial sector.

A rapid tightening of financial conditions

Global financing conditions tightened sharply during March and April as financial asset prices fell and borrowing costs spiked for a range of creditors. Various asset markets showed signs of dysfunction, making the issuance of new debt challenging for some corporates. South Africa also experienced a large capital flow shock as international investors withdrew investment funds rapidly in March 2020 (see Figure 13). Financial conditions have since eased to more normal levels, but non-resident portfolio flows to South Africa have continued to decline (albeit at a slower rate than in March). Amid the market turmoil in the second quarter of 2020, investors became concerned about a potential shortage of US dollar liquidity in global markets. Box 2 discusses this risk in the South African context.

Figure 13: Cumulative non-resident portfolio flows into South Africa

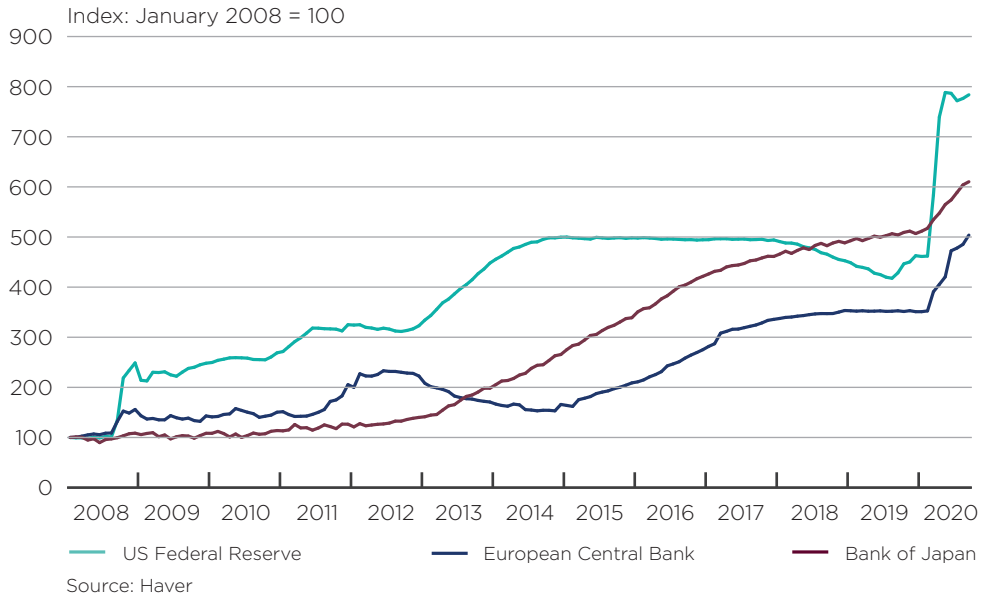


This data are calculated as the sum of non-resident bond and equity flows

Source: Strate

The risk of global financial conditions tightening again in the short run has diminished due to an extraordinary global policy response. Advanced economy central banks have purchased more than $5 trillion of financial assets since the start of the year in an effort to reduce borrowing costs and enhance market liquidity. In particular, the move by the Federal Reserve (Fed) and the European Central Bank (ECB) to purchase not only government bonds, but corporate debt, while also providing liquidity to their respective banking sectors helped to avoid a global credit crunch. The recent policy review by the Fed – resulting in a move to average inflation targeting and a greater focus on responding to unemployment below its natural rate than above – suggests that US monetary policy (and, in turn, global financial conditions more broadly) could remain accommodative for an extended period of time.

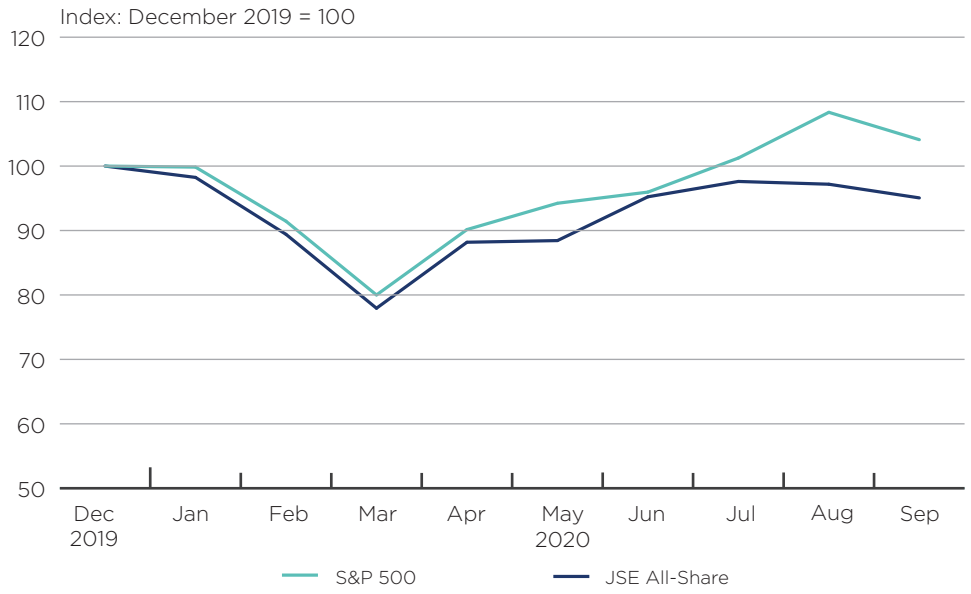
Figure 14: Central bank assets for selected advanced economies



Source: Haver

While financial markets have stabilised, the policy measures required to achieve this could fuel longer term risks. The growing belief that advanced economy central banks will backstop global credit markets could give rise to excessive risk taking and higher leverage over a medium term horizon. For example, the purchases of lower quality debt by the Fed has supported a recovery in issuance in the US corporate credit market. But, credit spreads for the lowest rated corporate debt have narrowed to levels seen last year. As these firms are close to default and many are facing solvency challenges due to COVID-19, this pricing appears incongruous with fundamentals. Stretched asset valuations are also present in other markets, which may reflect an overly optimistic view around the extent to which the Fed and other large central banks will provide support to such markets. These risks are less prominent in South Africa, as the SARB has not undertaken purchases of riskier assets, and corporate bond issuance is a relatively small share of total corporate debt (approximately 17%). However, financial market pricing is relative, so greater risk taking abroad can drive domestic asset price valuations, as has been seen in the correlation between the JSE All Share and S&P 500 indices recently (see Figure 15).

Figure 15: JSE and S&P 500 performance



Source: Bloomberg

Should the impact of COVID-19 on domestic borrower solvency be worse than expected, there is potential for a renewed bout of market instability. The abundant levels of global liquidity suggest that future short-term financial market volatility will likely be more muted than what was seen in the first half of this year. Nevertheless, specific markets could be vulnerable to a further episode of instability. For example, with government having to issue large quantities of debt over the near term, bond market volatility or even renewed market dysfunction are possible if risk aversion returns.

Box 2: US dollar liquidity risks during COVID-19

The US dollar (USD) remains the currency of choice for foreign exchange funding transactions, investment and global trade invoicing. According to the Bank for International Settlements (BIS), approximately half of all cross-border bank loans and international debt securities are denominated in USD.[1]

Globally, borrowers are attracted to the USD funding market because of its depth and liquidity. During normal times, borrowers benefit from a vast network of lenders and low transaction costs, which enhances risk sharing and the efficiency with which resources are allocated.[2] However, during periods of financial market stress, shocks can be amplified across the global economy through USD funding markets. This can give rise to financial stability risks if access to USD funding becomes challenging or expensive for borrowers outside of the US.

Emerging market economies tend to be most affected by a severe tightening in USD liquidity conditions. This is due to the reliance of many emerging markets (EMs) on USD bond issuances for both government and corporate funding. South Africa is relatively less exposed than many other EMs to USD funding risks, due to its deep domestic capital

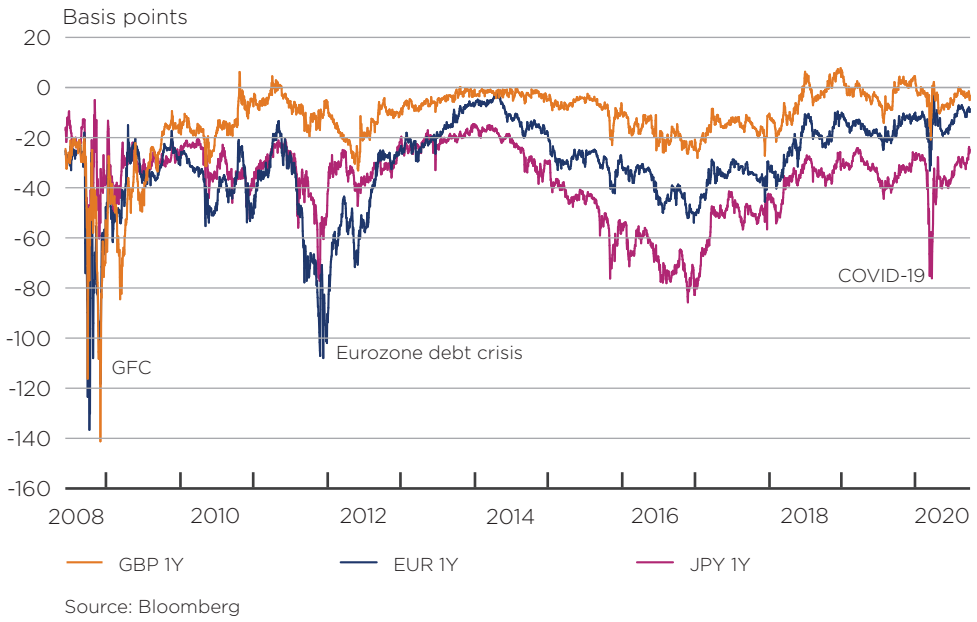
1 BIS Committee on the Global Financial System Paper, *US dollar funding: an international perspective*, 18 June 2020, available at https://www.bis.org/publ/cgfs65.pdf

2 Hedged US dollar borrowing costs have, at times, fallen below borrowing costs in other currencies, thereby generating a cost advantage for those borrowing in US dollars.

markets – which provide a large volume of local currency funding and the scope to hedge currency risks – as well as regulation which limits foreign exchange (FX) mismatches on bank balance sheets. Nevertheless, South Africa's historically large current account deficit and the significant participation of foreigner investors in domestic capital markets are indications that global investor sentiment does materially affect domestic financial conditions.

There are various indicators for monitoring USD funding pressures. The major ones include cross currency basis swaps[3] and the spread between the London interbank offered rate and the overnight index swap[4] (LIBOR-OIS) rate. USD funding pressures typically coincide with periods of macroeconomic stress (see Figure 16). Demand for USD against the rand increased substantially in the domestic spot and forward FX markets in March and April 2020. This was as a result of risk aversion and heightened volatility. The SARB did not intervene in the FX markets as financial intermediaries were able to source USD liquidity, albeit at a relatively higher cost (see Figure 17).

Figure 16: Euro, UK and Japan 1-year cross currency swap rates

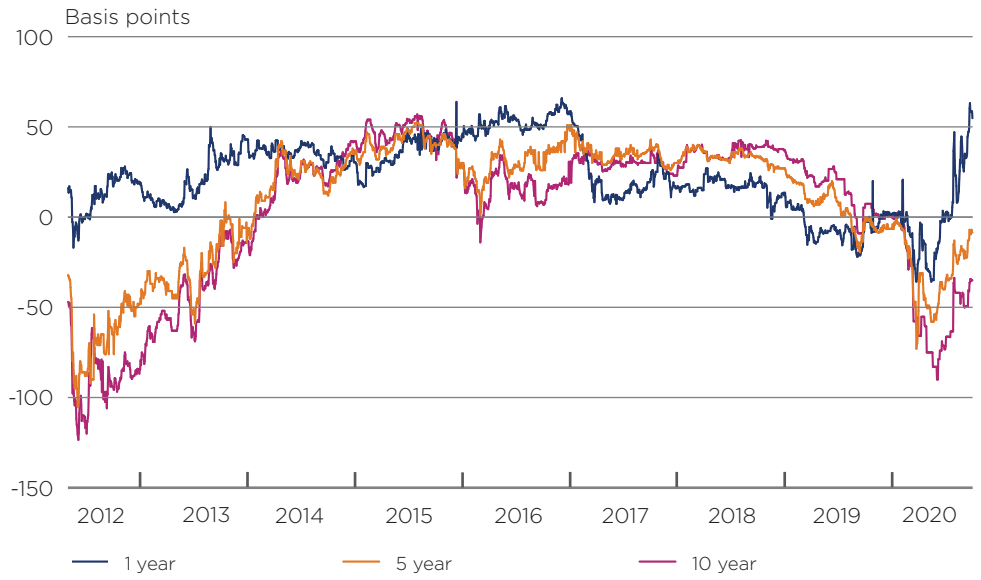


Source: Bloomberg

3 Using the USD, the USD cross currency basis is the difference between the cost of funding USD directly from cash market and the synthetic USD interest rate obtained when funding in a different currency and swapping that currency into the USD. A positive (negative) currency basis implies that the direct cost is higher (lower) than the synthetic one. The increase in USD funding costs indicates widening of the cross currency basis: that is, it becomes more negative and vice versa.

4 The Libor-OIS spread measures of the health of banks as it perceived to reflects the risk of default associated with lending to other banks, often used as a barometer of fears of bank insolvency.

Figure 17: ZAR-USD cross currency swap rates



Source: Bloomberg

The expansion of standing facilities by the Fed in March to include various advanced and EM central banks eased USD liquidity pressures globally. The Fed also introduced a temporary repurchase agreement facility for foreign and international monetary authorities (the FIMA repo facility).[5] This allows counterparts to temporarily exchange their US Treasury securities held with the Fed for USD. As a complement to these measures, the International Monetary Fund (IMF) introduced a new facility called the Short-term Liquidity Line (SLL)[6] to provide foreign currency funding to countries facing short-term liquidity needs. These measures helped to avert a more serious USD squeeze in global markets during the first half of 2020.

5 South Africa has been approved to participate in the FIMA facility.

6 For more details, see https://blogs.imf.org/2020/04/22/the-short-term-liquidity-line-a-new-imf-tool-to-help-in-the-crisis/

A cyberattack on key financial infrastructure

Cyberattacks remain one of the key threats to financial institutions domestically and abroad. Data regarding attempted cyberattacks are scarce for the domestic financial sector. However, feedback from engagements with large banking and insurance groups indicates that the number of attempted attacks has been rising consistently in recent years. At a global level, cyberattacks are as much as 300 times more likely to be levelled against financial services firms than other types of firms.[15]

15 See: https://www.bcg.com/press/20june2019-global-wealth-report.

There are three main channels through which cyberattacks can affect financial institutions. These are integrity, confidentiality and availability. Integrity challenges relate to the abuse of systems, for example through fraud. Confidentiality refers to the unauthorised disclosure of data, for example through a data breach. Availability issues arise as a result of disruptions to the functioning of financial systems and infrastructure. In each case, firms can incur substantial direct and indirect costs, which can potentially become systemic in nature.

The emergence of COVID-19 has created unique cyber-risks. A recent report by Interpol indicates that the incidence of cyber-crime globally has increased amid the COVID-19 outbreak.[16] COVID-19 has led to rapid changes in the way in which staff are engaging with systems (e.g. by working remotely) and has resulted in increased use of electronic payments, both of which may expose financial institutions to new sources of cyber-risk and their systems to new attack paths.

Despite the large number of attempted attacks on the domestic financial sector, firms have been successful in repelling these attacks, especially those that are likely to pose systemic risks. Large firms, in particular, have invested heavily in the skills and infrastructure necessary to mitigate cyber-risks. Although there is always a potential for a successful cyberattack at any firm, the risks are particularly pronounced for smaller firms and third-party service providers to the financial sector.

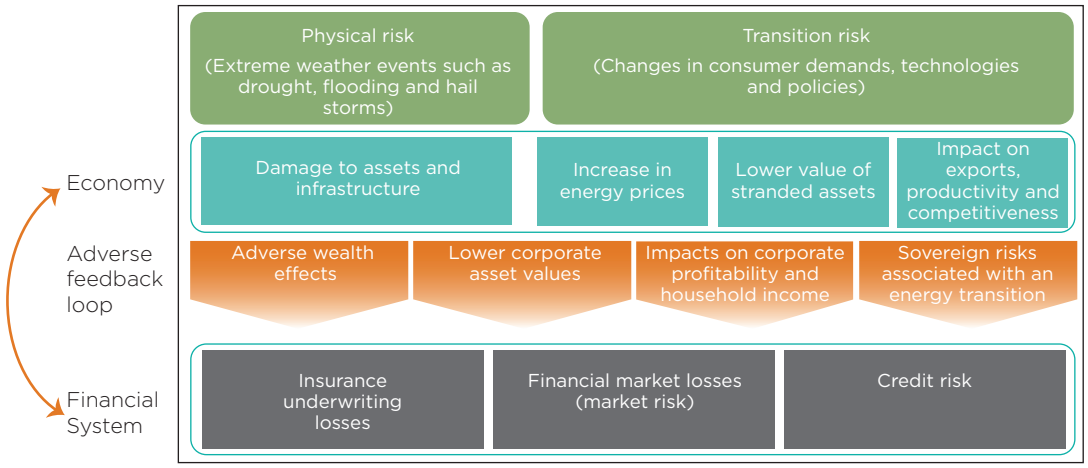
A large financial data breach was reported in August 2020, affecting as many as 24 million bank clients. This breach occurred through a consumer credit bureau. Personal details of various banks' clients were shared by the credit bureau with a third party pretending to be a legitimate customer. While this did not directly allow access to these persons' bank accounts, it created the opportunity for criminals to impersonate these people. To date, this breach has not created financial stability risks, but it does highlight the ongoing data integrity and confidentiality risks faced by the financial services industry and its service providers.

Climate change: physical and transition risks

Climate change poses a variety of risks to the economy and the financial sector which bear monitoring. Two distinct classes of risk are highlighted in the financial stability literature: physical risks and transition risks. Figure 18 demonstrates how these risks can affect the financial system.

16 See: https://www.interpol.int/en/News-and-Events/News/2020/INTERPOL-report-shows-alarming-rate-of-cyberattacks-during-COVID-19

Figure 18: Potential financial stability risks associated with climate change



Sources: Bundesbank, IMF and SARB

Physical risks are the potential financial losses suffered as a result of adverse weather conditions caused by climate change. The increasing frequency and intensity of climatic events is causing substantial damage to property and adverse impacts on business profits. A case in point being the drought-induced water shortages suffered by the Western Cape between 2016 and 2018, which had a large impact on various sectors, including tourism and agriculture. Physical risks may translate into losses for insurance companies, banks and other financial institutions that are exposed to the affected industries or assets.

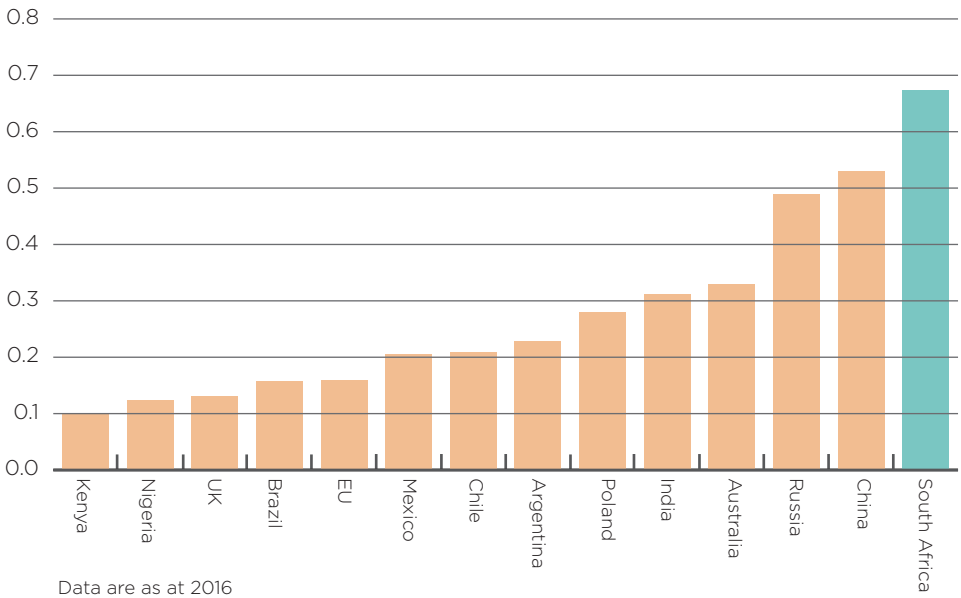
Transition risks associated with an adjustment towards a lower-carbon economy are increasing. Transition risks arise from the global adjustment to a greener, more sustainable economy. As public preferences, policy and business models adjust, some sectors of the economy will face shifts in asset prices or a higher cost of doing business. While the transition itself is likely to be positive for the economy, it can give rise to financial risks for those entities that are exposed to vulnerable assets or industries. It is clear that the increasing global focus on environmental sustainability poses risks to South Africa's economy, given its reliance on mineral exports and coal power (among other things). According to one estimate,[17] as much as three quarters of the transition risk faced by the South African economy is determined by factors outside of its own control, including changes to global coal and oil markets. A clear case of exogenous transition risk is the announcement by the European Commission, that it plans to propose a carbon border adjustment tax for certain sectors to help fund its COVID-19 stimulus plan.[18] Although not finalised, such a tax would be imposed on imports into the European Union (EU), which

17 Climate Policy Initiative. 2019. Understanding the impact of a low carbon transition on South Africa. https://climatepolicyinitiative.org/wp-content/uploads/2019/03/CPI-Energy-Finance-Understanding-the-impact-of-a-low-carbon-transition-on-South-Africa-March-2019.pdf.

18 See, https://ec.europa.eu/taxation_customs/news/commission-launches-public-consultations-energy-taxation-and-carbon-border-adjustment-mechanism_en

are produced in a more carbon intensive manner than similar products in the EU are. As South Africa is one of the largest emitters of carbon per unit of output in the world (see Figure 19), this move could significantly impair the competitiveness of South Africa's exports to the EU (which accounts for about a quarter of total exports). As global efforts to address climate change continue, it is likely that transition risks will escalate.

Figure 19: Carbon dioxide emissions (kilograms per purchasing power parity USD of GDP)



Data are as at 2016
Source: World Bank

Insurance coverage and the financial position of government are important determinants of the impact of climate-related disasters on financial stability. Recent International Monetary Fund (IMF) research[19] demonstrates that governments often play an important role in supporting reconstruction after a climate disaster has materialised (in part because these events often affect government-owned infrastructure). Consequently, countries with greater sovereign financial strength typically experience a more muted financial sector impact in the event that physical climatic risk materialises. Conversely, countries with relatively high levels of public debt are exposed to greater financial stability risks during disasters, as these can further exacerbate a government's financial vulnerabilities and accentuate financial sector-sovereign nexus risks. The relatively weak fiscal position of South Africa's government could restrain its ability to respond to future climate disasters (should they occur) and may result in larger private sector losses.

19 IMF Global Financial Stability Report, April 2020.

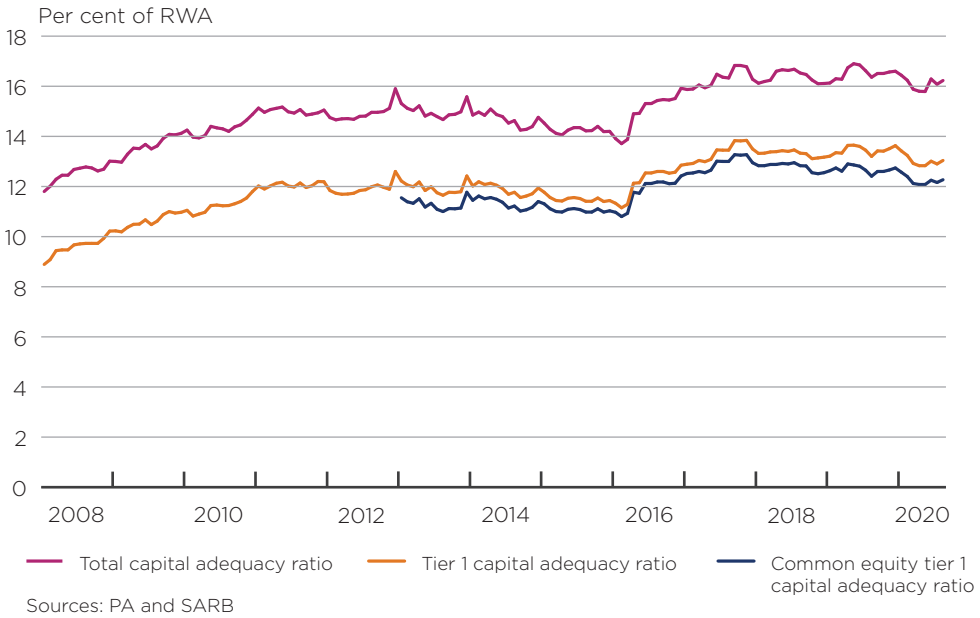
Additional reporting by financial institutions is required to accurately detect and monitor both the transition and physical risks associated with climate change. The exposure of the domestic financial sector to climate risk is difficult to estimate due to limited reporting by firms. Enhanced reporting will not only allow regulators and investors to better assess risk, but will also create stronger incentives for financial firms to manage their own risk exposures.

Resilience statement

South Africa's financial system has proven its resilience through the initial phase of the COVID-19 shock. Credit extension has continued to grow in recent months and no large financial firms have failed as a result of the disruptions caused by COVID-19. Conditions in financial markets have started to normalise after an initial wave of volatility in the first half of the year.

South Africa's banking sector remains well capitalised with high levels of liquidity. The capital adequacy ratio (CAR) of the sector has remained near levels seen at the end of last year (and well above the average levels over the past decade), despite a recent deterioration in credit quality (see Figure 20). This, in part, reflects increased provisioning, new capital issuances by various banks – demonstrating their ability to continue to raise capital during this difficult time – as well as the suspension of dividend payments. The banking sector has also increased its liquidity buffers in recent months to levels well above the minimum regulatory requirement.[20]

Figure 20: Capital adequacy ratios of the domestic banking sector



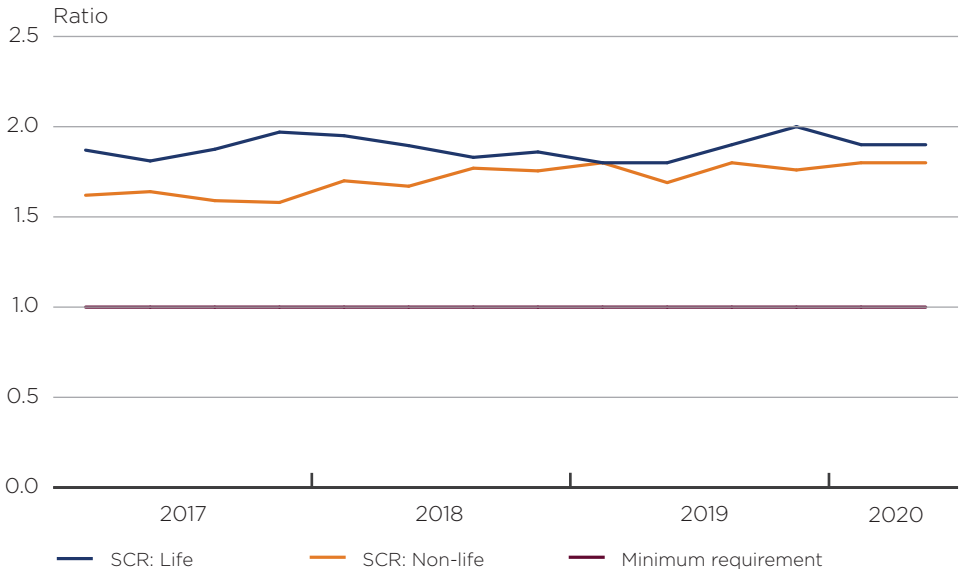
Sources: PA and SARB

20 See the banking sector section of Chapter 3 for further details.

South Africa's systemically important banks are expected to maintain a CAR above the minimum requirement, even under a severe stress scenario. Chapter 2 of this document describes the recent solvency stress test undertaken by the SARB to establish whether the systemically important financial institutions (SIFIs) hold sufficient capital to withstand a macroeconomic stress even worse than the one that is projected to play out over the medium term. On aggregate, the SIFIs were found to have sufficient capital (without breaching their minimum regulatory requirement) for such an eventuality, which would be unprecedented in its severity.

The insurance sector is well capitalised, but faces near-term profitability challenges. The aggregate solvency capital ratios of both life and non-life insurers were broadly stable in the first half of 2020, and were well above the minimum regulatory requirement (see Figure 21). The insurance sector was able to slightly increase its gross written premiums in the first half of 2020 (relative to the same time in 2019), but profitability challenges emerged, especially for long-term insurers. It is anticipated that insurers' profitability will remain under pressure in the short term due to weak new business growth, elevated lapses and surrenders and higher claims for various lines of business. However, the sector has substantial solvency buffers and is expected to maintain average solvency levels above the minimum regulatory requirement.

Figure 21: Solvency ratios of the domestic insurance sector



Sources: PA and SARB

COVID-19 poses material risks to smaller financial institutions. Smaller banks and insurers are generally less diversified, both geographically and in terms of product mix. Thus, a high exposure to particularly badly affected industries or locations could pose risks to some firms. While these risks could lead to solvency challenges in certain cases, the broader financial sector is expected to remain stable and resilient to the risks discussed in this document.

Liquidity challenges were experienced in various markets during the first half of 2020, but these were managed without any major disruptions. As many financial market participants sought to move their exposures to shorter duration and more liquid investments during the first half of 2020, there was a risk that some financial institutions would experience a sharp drop in the availability of funding (particularly of a longer term nature).[21] The provision of additional liquidity by the SARB to banks, alongside changes in regulations (discussed further in the next section) helped to alleviate a 'cash crunch'. While the SARB was concerned about the risk of redemptions from collective investment schemes (CISs)[22] and the potential for fire sales[23] of assets by these schemes, these risks did not materialise. In fact, CISs continued to attract significant inflows during the first half of 2020. Given the scale of the market shock experienced in March and April 2020, these continued inflows reflect high levels of confidence in the CIS sector.

The revealed fragility of the domestic bond markets is a cause for concern. Bond markets in various advanced and emerging market economies showed signs of dysfunction in 2020. This also occurred in South Africa as primary corporate bond issuance declined (with a number of large corporates cancelling auctions in the first half of the year) and elevated price volatility emerged in the secondary government bond market. The SARB responded by purchasing government bonds in the secondary market to address the dysfunction. The fact that many advanced and emerging market central banks intervened in their respective domestic government bond markets suggests that market dysfunction was a highly correlated, rather than a South Africa specific event. To enhance the liquidity and functioning of domestic financial markets, the SARB is currently working with other domestic financial regulators to implement the recommendations of the 2018 Financial Markets Review.[24] This work aims to address governance, market conduct and market structure deficiencies in domestic capital markets.

Listed firms were able to increase their issuance of equity during the first half of 2020. The value of equity capital raised on the JSE Limited (JSE) increased in the first and second quarters of 2020 to levels last seen in 2018 (see Figure 22). This highlights the value of the domestic equity market as a source of financing for firms, even during challenging market conditions. Despite the pick-up in issuance during 2020, equity capital raising has been on a downward trend since 2014, representing a declining share of financing for firms.

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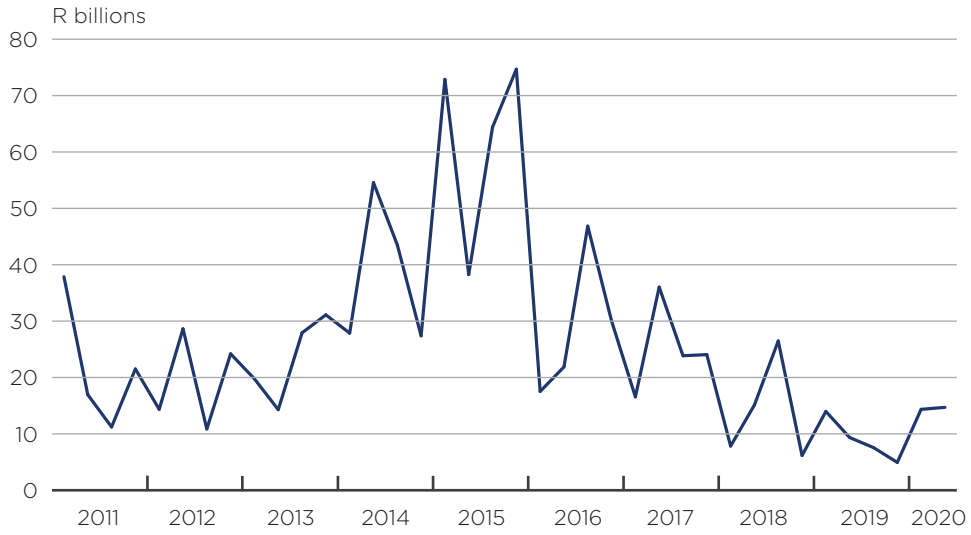
21 Commercial bank funding from CISs and asset managers amounts to nearly 13% of total bank financial assets, making this an important source of funding for the banking sector.

22 A CIS is an investment vehicle that allows investors to pool their money into a portfolio, sharing in the risk and return of the portfolio in proportion to their participatory interest in the portfolio. CIS's may invest in a range of different assets including bonds and equities.

23 A fire sale is a situation in which a financial intermediary is forced to sell assets at a loss in order to provide liquidity to those seeking to withdraw funding from that intermediary. This can result in liquidity pressure morphing into solvency risk.

24 For more information about the Financial Markets Review, see http://www.treasury.gov.za/publications/other/2018_FMR_07.pdf

Figure 22: Equity capital raised on the JSE



Sources: JSE and SARB

Policy actions undertaken to enhance financial stability

Since March 2020, the SARB has undertaken a range of policy interventions to enhance financial stability. Nine discreet actions were taken, which cut across a variety of policy areas and whose aim, in some cases, extend beyond financial stability alone. In broad terms, the actions were aimed to ensure a continued flow of credit into the economy and to support the economic recovery from COVID-19, while also maintaining the soundness and functioning of the domestic financial system. All of these policy actions are intended to be temporary and certain interventions have already been scaled back in response to more normal market conditions. Each of the actions is discussed below, with reference to the impact that it had on the financial sector.

Enhanced money market liquidity operations

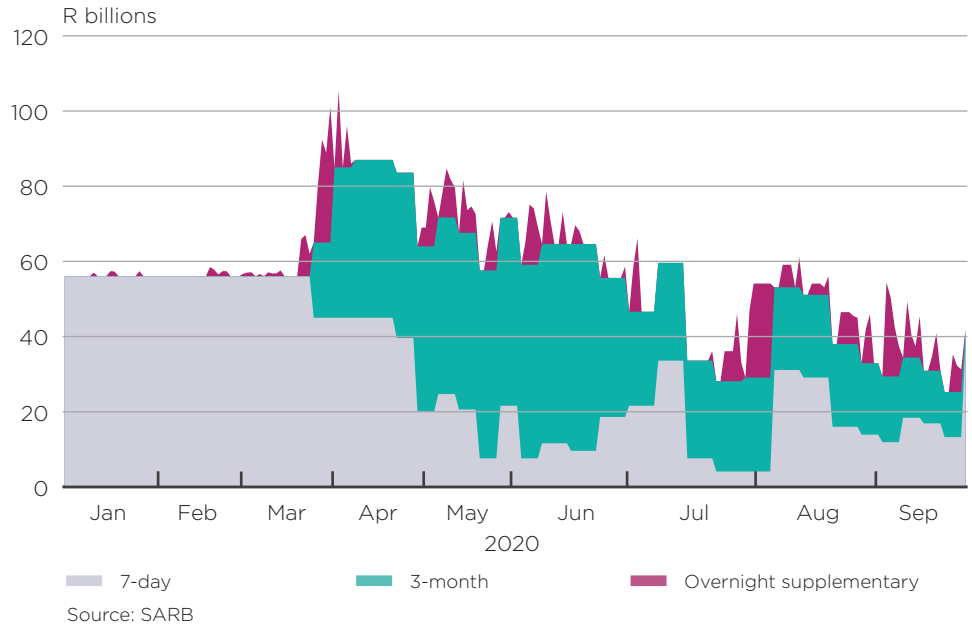
In response to strains in money markets during March 2020, the SARB increased the provision of liquidity to the banking sector. Three interventions in the money market have been undertaken with the aim of supporting shorter term and medium term access to liquidity for banks as well as to reduce the cost of this funding and to penalise liquidity hoarding. First, the SARB introduced supplementary intraday overnight repurchase (repo) operations with the aim of providing additional short term liquidity to banks. Second, the SARB extended the maturity of its main repo facilities beyond the usual 7 days to include a 3-month tenor.[25] Third, the SARB reduced its standing facilities

25 For further details, see https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9805/Further%20amendments%20to%20the%20money%20market%20liquidity%20management%20strategy%20of%20the%20SARB.pdf

(SF) interest rates.[26] The SF reverse repurchase rate (the rate at which the SARB absorbs liquidity from commercial banks) was lowered to repo minus 200 basis points (from repo minus 100 basis points). The SF repurchase rate (the rate at which the SARB provides liquidity to commercial banks) was also lowered by 100 basis points to the level of the repo rate.

The value of repo operations outstanding almost doubled in late March and early April. Outstanding repo operations increased from an average of R56 billion in the first two months of 2020 to as much as R105 billion in early April, before gradually moderating thereafter (see Figure 23). This reflects a substantial expansion of the 3-month repo facility. The longer funding tenor was important in supporting confidence during heightened uncertainty around bank funding, as many institutional investors were shifting into shorter duration funding instruments, creating a squeeze on banks. Conditions in funding markets have stabilised in recent months, resulting in the size of repo funding outstanding returning to more normal levels.

Figure 23: The size and composition of the SARB repo facilities in 2020

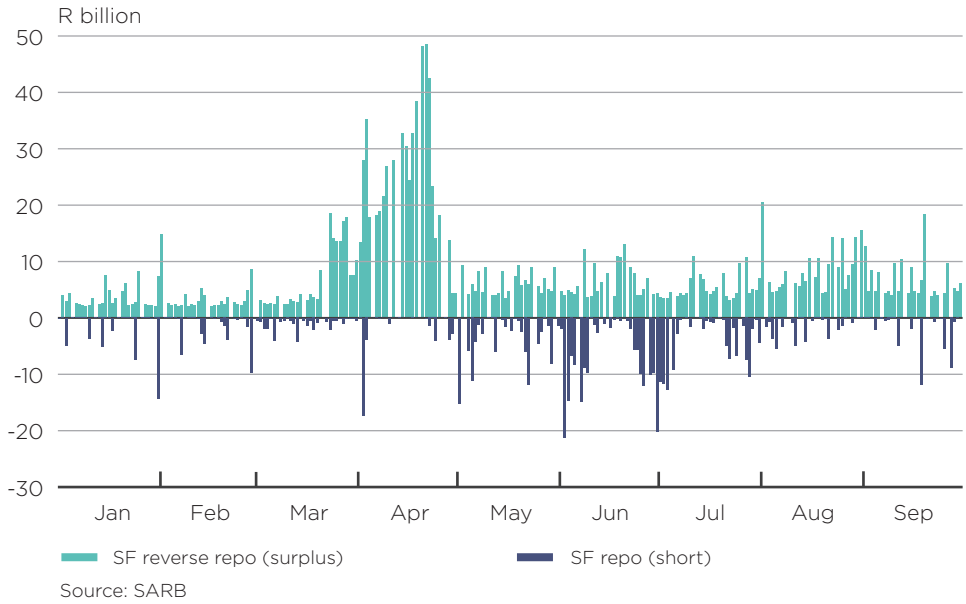


Source: SARB

Commercial banks substantially increased their deposits with the SARB during late March and April 2020, reflecting increased market liquidity. As the liquidity in the financial system increased due to the additional repo operations provided by the SARB, commercial bank deposits through the SF continued to rise, peaking in mid-April (see Figure 24). However, amid a stabilisation of market conditions from May onwards and reduced provision of liquidity by the SARB, the use of the SF has declined.

26 SFs allow banks to deposit funds with, or borrow funds from the SARB, on an overnight basis. For further information, see https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9791/Changes%20to%20the%20money%20market%20liquidity%20management%20strategy%20of%20the%20SARB.pdf

Figure 24: The value of funds provided and absorbed through standing facilities during 2020



Source: SARB

Standing facilities rates have been adjusted back to the levels prevailing prior to the COVID-19 shock.[27] With liquidity conditions normalising, the SARB decided to revert to the previous interest rates on both SFs, as from 19 August 2020. Therefore, the SF reverse repurchase rate has reverted to repo minus 100 basis points and the SF repurchase rate has reverted to repo plus 100 basis points.

The normalisation of liquidity provision and standing facility rates is an encouraging sign that liquidity pressures in the domestic financial markets have eased. Recent engagements with domestic financial market participants confirms that the high demand for cash or cash-like assets has subsided since concerns around COVID-19 initially emerged. The combination of measures taken by the SARB as well as those taken by other central banks appear to have supported this outcome.

Government bond purchases in the secondary market

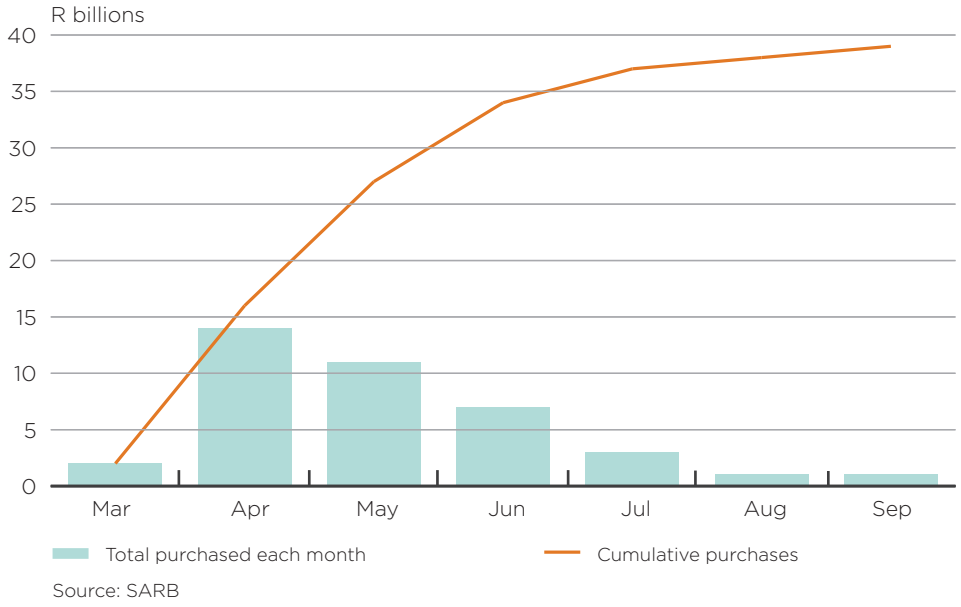
In response to signs of government bond market dysfunction, the SARB initiated a bond buying programme in March 2020. The SARB has purchased government bonds in the secondary market (in other words, it has not purchased them directly from government), to ensure the orderly functioning of the market in the face of heightened price volatility. A well-functioning government bond market is imperative for financial stability for various reasons. First, this market is the primary source of financing for government. Second, government bond yields provide an important benchmark for the cost of funding at different maturities for a range of private

27 See https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/10170/NOTICE%20-%20Amendment%20to%20the%20Standing%20Facility%20rates.pdf

sector credit transactions. Third, government bonds serve as an integral part of the financial system being used daily as collateral in credit agreements and held by banks as high-quality liquid assets that can be sold on demand if the bank requires cash. In short, the domestic financial system cannot operate effectively without a well-functioning bond market.

The SARB's intervention in the government bond market has been small in scale, and will be temporary. As the intention of bond purchases was not to affect prices, but to crowd in private participation in the market, the SARB did not acquire a large quantity of bonds. The cumulative purchases of government bonds stood at R38.9 billion as at the end of September, with new purchases having tapered off significantly since April (see Figure 25). The SARB's cumulative purchases account for approximately 1% of government's long-term domestic debt and less than 5% of its gross borrowing requirement in the current fiscal year. Furthermore, these bond purchases now form part of the SARB's monetary policy portfolio and can be used in future to drain liquidity from the money market.

Figure 25: SARB purchases of government bonds

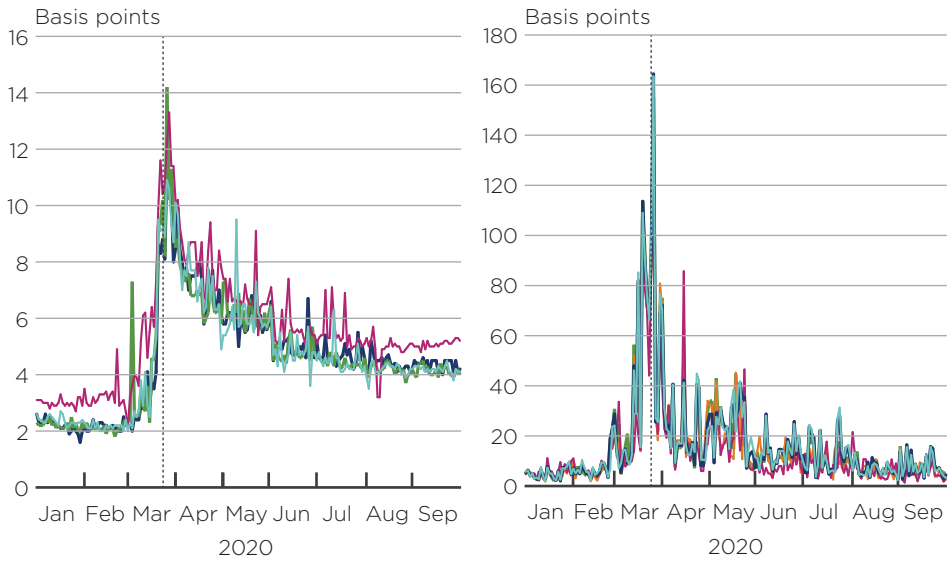


Source: SARB

The SARB's interventions appear to have supported the functioning of the government bond market. Both daily trading ranges (a measure of intraday volatility) and bid-offer spreads in the government bond market (the difference between the lowest offer price and the highest bid price for a bond) were at unusually elevated levels during March 2020. This signalled potential dysfunction in the market. As wide bid-offer spreads indicated that buyers and sellers were diverging meaningfully on the price at which they were willing to trade, there was a risk that trading volumes would decline and price discovery would be impaired. Since the SARB bond buying programme

began in late-March 2020, bid-offer spreads and intraday volatility have adjusted lower, with the former still slightly above its pre-COVID average and the latter having returned to normal levels (see Figure 26).

Figure 26: Bid-offer spreads (left panel) and daily trading ranges (right panel) for selected government bonds



Sources: Bloomberg and SARB

Easing of bank capital requirements

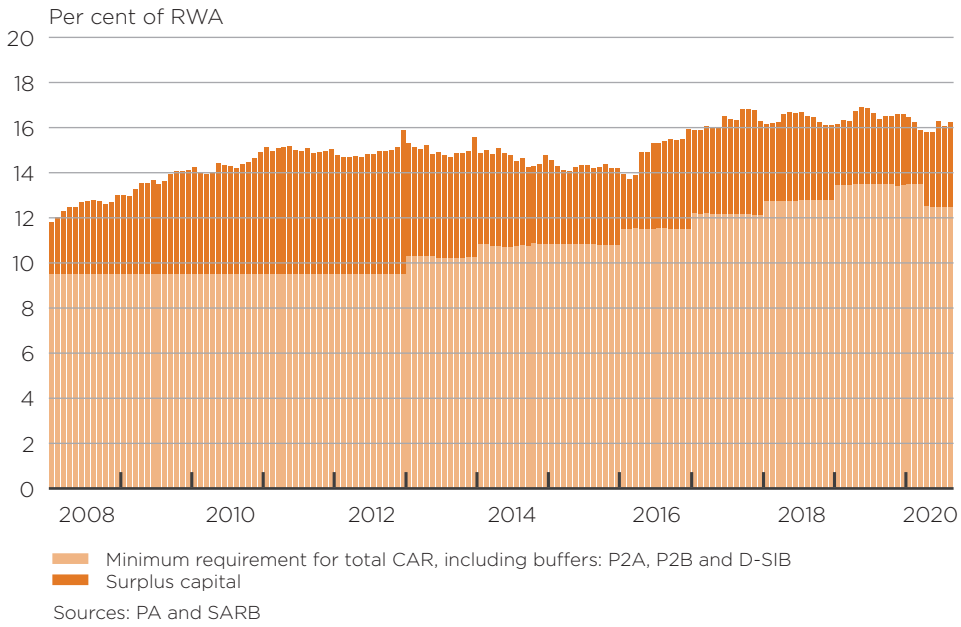
The Prudential Authority (PA) reduced the minimum commercial bank capital requirements by 1% of risk weighted assets (RWA) in April 2020.[28] This came in the form of a temporary reduction in the Pillar 2A capital buffer (also known as the systemic risk buffer) from 1% to 0% of RWA for all banks. As a result, the minimum average capital requirement for the banking sector dropped from approximately 13.5% to 12.5% of RWA in April.[29] The PA also provided criteria on how individual banks may utilise their capital conservation buffer (which is loss absorbing capital built up for periods of economic stress), should this be necessary. Providing scope for banks to operate with a lower CAR during a large adverse shock (such as COVID-19) allows for a continued flow of credit into the economy. This is important to support an economic recovery, but also to avoid a bad outcome for banks. If all banks were to simultaneously reduce credit extension in an attempt to rebuild capital buffers while the economy is in a deep recession, the negative shock to the economy could result in heightened pressure on bank profits and increased non-performing loans.

28 See: https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9843/D2%20of%202020%20-%20Matters%20related%20to%20temporary%20capital%20relief%20in%20light%20of%20COVID%2019.pdf

29 Note that capital requirements for individual banks differ due to variable individual capital requirements imposed on banks based on their business models and level of risk exposure. These capital requirements may also change through time. The average capital requirement for the banking sector as a whole will therefore differ from those of individual banks.

Currently, the banking sector has significant surplus capital. Figure 27 indicates that surplus capital in the banking sector has actually increased since the start of the year, from 3.2% of RWA in December 2019 to 3.8% in August 2020. Aside from the reduction in the minimum regulatory requirement, this is because banks have raised additional provisions, new capital and have not paid dividends in recent months (bolstering retained earnings). However, as NPLs are likely to continue to increase toward the end of the year, and possibly into 2021, bank CARs are likely to decline. The solvency stress test results presented in Chapter 2 highlight this possibility under both a baseline and stress scenario. Thus, it may be too soon to quantify the importance of a temporarily lower capital requirement in an environment in which bank capital is under pressure.

Figure 27: Minimum capital requirement for the banking sector



Sources: PA and SARB

Easing of the liquidity coverage ratio requirement

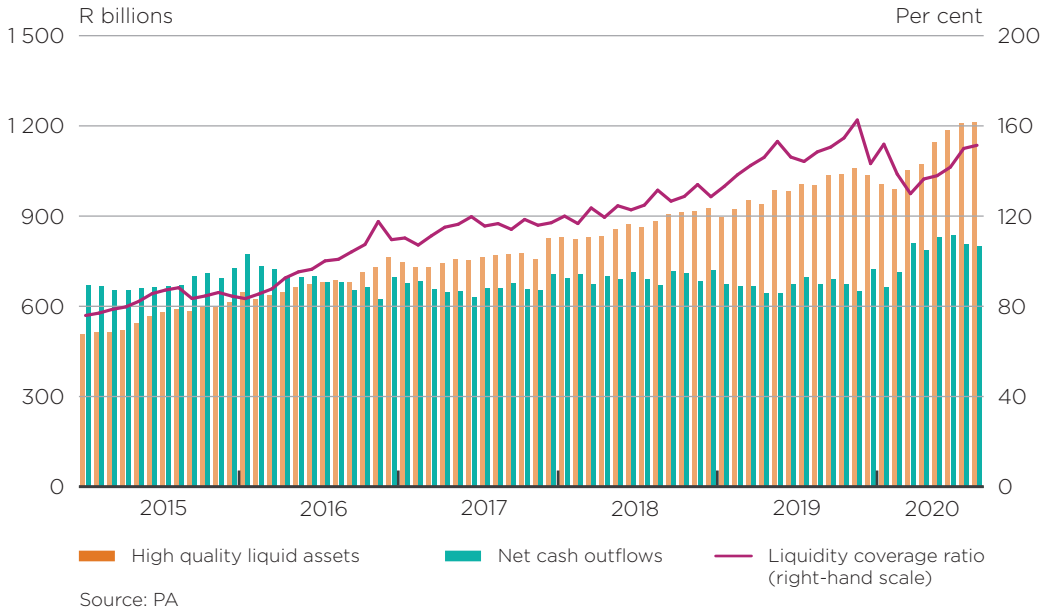
The PA reduced the liquidity coverage ratio (LCR) requirement for banks, from 100% to 80%.[30] The LCR requires banks to hold sufficient high-quality liquid assets (HQLAs) to cover a 30-day period of liquidity stress (high levels of funding withdrawals). The financial market stress that peaked in March and April of this year resulted in a decline in the price of government securities (which forms the majority of the HQLA held by banks), while the maturity profile of bank funding shortened as institutional investors exhibited a preference

30 See: https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9821/D1%20of%202020%20-%20Temporary%20Measures%20to%20aid%20compliance%20with%20the%20LCR%20during%20COVID-19%20pandemic%20stress%20period.pdf

for cash-like investments. This pushed down the LCR for many banks and raised the risk that some banks could breach their minimum requirement. As the authorities did not want to force banks to acquire additional government bonds (potentially at the expense of credit provision to the private sector) or to extend the maturity profile of deposits at a time when term funding was becoming expensive and scarce, the decision was taken to reduce the LCR requirement.

The banking sector is operating well above its minimum LCR requirement. Despite the reduction in the required LCR, the banking sector has significantly increased its liquidity buffers in recent months. As of August 2020, the LCR for the total banking sector was 151%. This reflects a normalisation in market conditions (as bond prices and the share of term deposits have partially normalised) as well as significant growth in bank holdings of government bonds. Bank lending to the government has increased strongly in recent months on the back of significant sales of government bonds by foreign investors as well as a rise in debt issuance by government.

Figure 28: The banking sector's LCR



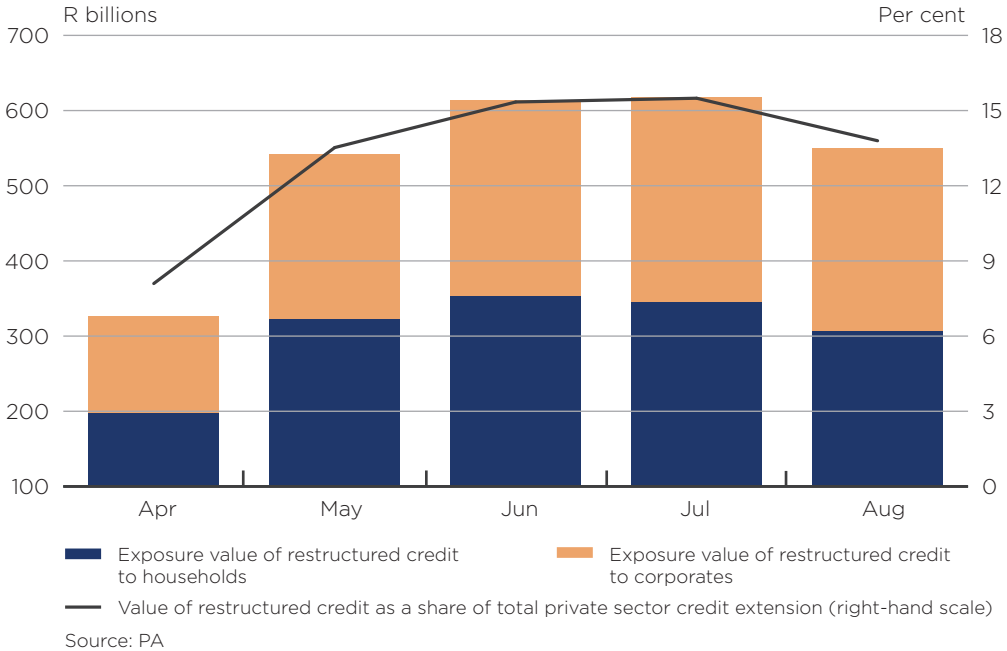
Source: PA

Adjusted guidance on the regulatory treatment of restructured loans

The PA has adjusted the regulatory treatment of loans restructured as a result of COVID-19. Typically, if a bank restructures a loan due to the inability of the borrower to service the loan, this will require the bank to hold additional capital commensurate with the increased risk of non-payment associated with this loan. However, the PA has determined that banks will not have to hold additional capital against loans restructured as a result of

COVID-19 related causes, as long as these loans were up to date at the end of February 2020.[31] This capital relief only applies to the extent that lenders are of the view that there is a reasonable likelihood of loan repayment. If the borrower faces circumstances which are not expected to be temporary and bring their ability to service the loan into question (such as a firm entering business rescue), then the loan will need to be treated as non-performing at the time of the changed circumstances. This regulatory adjustment has provided the scope for banks to restructure a very large gross value of credit. Figure 29 demonstrates that gross credit exposures exceeding 15% of total private sector credit extension have been restructured, with households accounting for slightly more of the restructures than corporates. The value of active restructured credit declined slightly in August to R550 billion (or 13.8% of private sector credit extension) as some restructures came to an end. These restructures have helped to avoid large scale foreclosures or the requirement for banks to hold significantly more capital (which in turn may have curbed lending). It is important to note that banks have restructured credit by providing borrowers with temporary cash flow relief through a break in repayments. However, interest and fees on these loans has continued to accumulate. Once the repayment break ends, borrowers need to resume servicing these loans.

Figure 29: The value of loans restructured by the banking sector



Source: PA

31 See https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9844/D3%20of%202020%20-%20Matters%20related%20to%20the%20treatment%20of%20restructured%20credit%20exposures%20due%20to%20the%20Coronavirus%20(Covid-19)%20pandemic.pdf.

The PA has also adjusted its guidance regarding the determination of expected credit losses. International Financial Reporting Standard (IFRS) 9 requires banks to set aside provisions for expected credit losses based on forward-looking information. The PA has indicated that banks may refrain from increasing their provisioning against loans that have been restructured due to COVID-19. This applies only to loans which can reasonably be expected to be repaid after the loan restructuring (or repayment relief) comes to an end. Additional guidance relating to IFRS 9 has also been provided by the PA, in particular that banks should avoid procyclical assumptions in their IFRS 9 economic modelling at this time.[32]

Loan Guarantee Scheme

The Loan Guarantee Scheme provides funding to qualifying businesses negatively affected by COVID-19 and the associated lockdown measures. The scheme provides loans to be used for firm's operational expenses and began assessing applications in May 2020. These loans are substantially guaranteed by government, but the risk of non-repayment is shared with the commercial banking sector.[33] National Treasury initially provided a R100 billion guarantee to participating banks through the SARB, with the option to extend the scheme to R200 billion if required. These loans are granted at the prime interest rate to businesses in good financial standing at the end of 2019, and are required to be repaid over five years.

In July 2020 the scheme was augmented to boost take-up. Initial loan take-up was low, so NT announced various changes to the eligibility requirements of the scheme. Among other things, the draw-down period as well as the repayment holiday (after the final draw-down) were extended from three to six months, the test for good financial standing was made easier and the limit on firm size for eligibility was replaced with a limit on the maximum loan size.[34]

Approximately R16.1 billion in loans has been provided through the loan guarantee scheme as at the end of September 2020. This represents the provision of almost 12 000 loans. The value of loans extended under the scheme has been lower than expected, which likely reflects the uncertain economic environment and the limited appetite of business owners to take on additional debt.

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32 See https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9811/Guidance%20note_Covid-19%20-%20IFRS%209.pdf

33 The way risk sharing works under the scheme is that the SARB makes loans to a commercial bank, which are guaranteed by government. These loans are granted at the repo rate plus 50 basis points (the 50 basis points being a credit premium). The commercial banks then lend the money to firms at the prime lending rate (repo plus 350 basis points). The interest rate spread earned by commercial banks on these loans will be used to absorb any losses caused by non-repayment. Thereafter, the 50 basis point credit premium on these loans will absorb losses. Further losses will be absorbed by banks, up to 6 percentage points of the amount loaned by that particular bank under the scheme. Any additional losses will be absorbed by government. The SARB takes no financial risk in the scheme.

34 For further details on the changes to the Loan Guarantee Scheme, see: https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/10119/COVID-19%20loan%20guarantee%20scheme_FAQs%2026%20July.pdf

Guidance on the payment of dividends by commercial banks

The PA provided guidance that no dividends on ordinary shares and no payment of cash bonuses to material risk takers should take place in 2020.[35] This guidance was released early in April 2020. The intention of the guidance was to ensure that banks retain sufficient capital to absorb losses and continue extending credit to the real economy. Given that the regulatory minimum capital requirement for the banking sector was reduced due to the extraordinary COVID-19 shock, it was logical to request banks to avoid paying dividends in order to conserve their capital.

It is not possible to precisely measure the impact of this guidance on bank capital. This is because it is unclear what the value of bonus and dividend payments would have been in 2020. However, by calculating the value of these payments for 2019, the impact of the guidance on bank capital in 2020 can be estimated.

During 2019, the six largest banks[36] in South Africa paid R59.5 billion in dividends and R1.6 billion in cash bonuses to material risk takers. These banks account for more than 90% of the sector's assets, thereby providing a good proxy for the sector at large. The value of bonus and dividend payments in 2019 amounted to 12.5% of common equity tier (CET) 1 capital[37] for these banks as at December 2019. Thus, withholding dividend and bonus payments is expected to have a material impact on bank capital levels in 2020.[38]

Repo rate reductions

The SARB Monetary Policy Committee (MPC) has reduced the repo rate by a cumulative 300 basis points in 2020. These reductions have brought the repo rate to 3.5% and the prime lending rate to 7%, the lowest in more than 50 years. Figure 30 indicates that borrowing rates faced by consumers have tracked the prime lending rate lower.[39] To provide a simple illustration of the size of this monetary stimulus, consider the monthly cost of servicing a R1 million, 20-year floating rate home mortgage, issued at the prime lending rate. At the start of 2020, the monthly cost of servicing this mortgage would have been approximately R9 650. This cost has fallen to R7 750 per month, based on the most recent change to the prime lending rate. Consequently, the SARB's monetary policy actions have provided a substantial cushion to borrowers at a time of acute debt service challenges.[40]

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35 For the details of the guidance see: https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9845/GN4%20of%202020%20-%20Dividends%20and%20bonus%20payments%20in%20response%20to%20Covid19.pdf

36 These are South Africa's systemically important financial institutions (SIFIs).

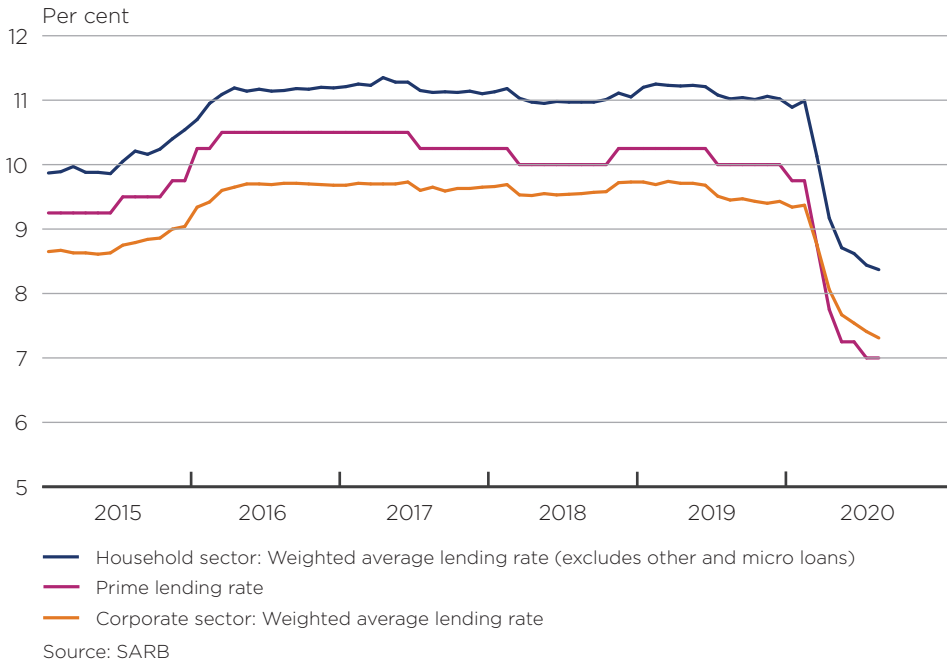
37 The CET 1 value used in this calculation excludes unappropriated profits.

38 One large bank did pay a dividend in 2020 as this dividend was declared prior to the issuance of the SARB guidance on dividend and bonus payments.

39 The average lending rates do not track the prime lending rate perfectly as some interest rates are fixed for a certain period of time.

40 For further details around the SARB's monetary policy response and the outlook for monetary policy, consult the SARB *Monetary Policy Review*, October 2020.

Figure 30: Weighted average lending interest rates to corporates and households



Source: SARB

Actions taken by other financial regulators

The Financial Sector Conduct Authority (FSCA) issued an exemption notice to CISs in May 2020, to allow for the suspension of sales and repurchases of participatory interests under certain circumstances.[41] This was a precautionary measure to ensure that potential runs on investment portfolios – during a period of market stress and illiquidity – do not result in undue losses for investors, or in financial instability. This measure allows CIS managers to suspend the issue, sale or repurchase of participatory interests in a portfolio, only in circumstances where a manager is unable to reasonably liquidate sufficient assets held in the portfolio in a manner that is not prejudicial to remaining investors. Under circumstances of market volatility and when many investors attempt to sell out of their shares in a CIS at the same time, the CIS manager may be forced to rapidly sell assets held in the portfolio, potentially pushing the selling price of these assets down and resulting in a loss of value for the remaining investors in the portfolio. Furthermore, if the portfolio is exposed to illiquid assets, it may not be possible for the CIS manager to sell a sufficient quantity of assets to cover the value of withdrawals from the portfolio. Under such circumstances, it may be beneficial to investors for the CIS manager to temporarily halt redemptions. However, no CIS manager has made use of this exemption to date.

41 See https://www.fsca.co.za/Notices/FSCA%20CIS%20NOTICE%202%20OF%202020.pdf

Regulatory developments with financial stability implications

In June 2020, Cabinet approved the tabling of the Financial Sector Laws Amendment Bill (FSLAB) in Parliament. The first part of the Bill introduces a comprehensive framework for resolving all banks as well as non-bank systemically important financial institutions that may be 'too big to fail'. The second part sets out the provisions to introduce, for the first time, an explicit, industry-funded deposit insurance scheme to protect qualifying depositors' funds up to a limit of R100 000 when a bank fails. The resolution and deposit insurance framework contained in the Bill has a number of significant policy objectives which include that:

- public funds will no longer be the default source of funding used to bail out failing banks and other large financial institutions;
- a deposit insurance scheme will be established and managed by the SARB through a newly established Corporation for Deposit Insurance;
- losses incurred due to the failure of a financial institution will in the first instance be borne (through bail-in) by shareholders and creditors who are able to properly assess their investment risks and who had benefited from profits made by the institution as a going concern;
- the SARB will get additional legal tools to ensure that critical services continue, and that financial stability is maintained in the event of the failure of a financial institution; and
- following international best practice, a modified creditor hierarchy for financial institutions falling within the scope of the envisaged framework is introduced in terms of which covered depositors will rank as preferred creditors.

It is important to note that the Bill has not yet been promulgated and remains subject to parliamentary approval.

The PA and the FSCA released the fitness, propriety and other matters related to significant owners Joint Standard in June 2020. The Joint Standard 1 of 2020[42] sets out requirements for persons who may have the ability to control or materially influence the business of a financial institution. This Joint Standard forms part of the PA and FSCA's prudential requirements of ensuring the safety and soundness of financial institutions.

42 Available at https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9970/1.%20Joint%20Standard%201%20of%202020%20-%20Significant%20Owner%20-%201%20June%202020%20-%20signed.pdf

In June 2020, the PA and the FSCA published the final margining rules in respect of non-centrally cleared over-the-counter (OTC) derivatives.[43] The Joint Standard 2 of 2020 was the final step in a multi-phase effort to align OTC derivatives legislation in South Africa with international standards. The purpose of these standards is to reduce systemic risk associated with non-centrally cleared derivatives and to promote the central clearing of derivative transactions. Although the South African OTC derivatives market is less than 1% of the global market, derivatives play an important role in the maintenance of financial stability. The transparency of the OTC derivatives market is an important area of post-global financial crisis reforms.

The proposed policy approach to crypto assets in South Africa has been published in a detailed position paper that was released in April 2020. This position paper[44] presents a set of recommendations which will culminate in a final policy stance from regulatory authorities who form part of the Intergovernmental Fintech Working Group (IFWG). The rationale for a crypto assets regulatory framework includes:

- ensuring the safety and efficiency of financial institutions and the financial system;
- consumer and investor protection;
- minimising regulatory arbitrage;
- combating illicit cross-border financial flows;
- combating tax evasion and tax avoidance arrangements; and
- supporting financial inclusion efforts and the advancement of technological innovation in a responsible and balanced manner.

43 Available at https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9975/2.%20Joint%20Standard%20on%20Margin%20Requirements.pdf

44 The position paper is available on https://www.ifwg.co.za/wp-content/uploads/IFWG_CAR_WG-Position_Paper_on_Crypto_Assets.pdf

Box 3: Progress on the reform of global benchmark interest rates

Unsecured interbank offered interest rates (IBORs) play a key role in financial markets. Simply put, these rates are calculated daily, through surveys, asking banks at what rate they could borrow funds from other banks in a particular jurisdiction. IBORs cover various currencies and loan maturities. Trillions of dollars of loans and derivatives reference these interest rates. Following attempted manipulation and a drop in the volume of interbank lending in some markets, regulators have announced plans to reform or replace IBORs. As part of a transition to alternative benchmark interest rates, UK regulators will no longer compel banks to quote rates for the London Interbank Offered Rate (LIBOR) after the end of 2021. LIBOR is one of the most widely referenced global IBORs. As a result of the UK's regulatory guidance, there is a risk that LIBOR will no longer be representative of the market it aims to measure, or will end completely, after 2021.

The transition from LIBOR is an important priority and a significant risk. There is still extensive global financial exposure to, and reliance on, LIBOR and other widely referenced IBORs,[1] mostly for OTC and exchange-traded derivatives. Transition away from LIBOR is necessary across the five LIBOR currencies (USD, EUR, JPY, GBP and CHF). In many cases, both financial and non-financial institutions may need to update fallback[2] language for contracts.

Continued reliance on LIBOR and transition inertia increases the threat of a disorderly transition at the end of 2021, which could pose risks to financial stability. While exposures to LIBOR are higher in LIBOR jurisdictions, low overall exposure elsewhere should not be construed as indicating lower levels of risk, as a disorderly transition by key market participants with substantial LIBOR exposures could have negative spillover effects. In South Africa, a survey which was carried out in early 2020 revealed that the domestic banking sector has a sizable notional exposure to LIBOR. The largest exposure is through derivatives, for which there was no fallback arrangement at the time the survey was conducted. However, the PA continues to engage with domestic banks in an effort to monitor and support transition progress.

In line with international best practice, the SARB has embarked on a project to reform domestic interest rate benchmarks and has made progress in identifying alternative reference rates. To manage the process of selecting and developing preferred alternative rates and to manage transition to such rates, a Market Practitioners Group (MPG)[3] was established. The MPG has adopted recommendations to strengthen the framework for the current key reference rate, the Johannesburg Interbank Average Rate (JIBAR). This will allow the MPG time to facilitate the transition to an alternative risk-free reference rate. It is expected that the measures which have been recommended to strengthen the JIBAR framework will be implemented by early 2021. These measures include increased balance sheet commitments for banks which contribute to the determination of JIBAR, as well as increased trade transparency through the publication of post-primary and secondary trade information. The enhanced framework will remain in place until an alternative overnight rate is fully functional, after which JIBAR will cease to exist.

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1 For the majority of IBORs, reform efforts in recent years have focused on strengthening their resilience and reliability, including ensuring that they are underpinned by transaction data to the greatest extent possible. The Financial Stability Board established an Official Sector Steering Group (OSSG) in 2013 to coordinate the international reform effort on interest rate benchmarks. See: https://www.fsb.org/work-of-the-fsb/policy-development/additional-policy-areas/financial-benchmarks/. The work of the OSSG has largely centred on recommendations related to improving processes around submissions, and in identifying alternative reference rates, and, where suitable, encouraging market participants to transition new contracts to such rates.

2 Fallback refers to sufficiently granular contract language that specifies the replacement reference rate in case of IBOR cessation.

3 The MPG is a public-private sector working group entrusted with the mandate to make final decisions on the choice of alternative reference rates, as well as the management of reference interest rates reforms. Further information on the MPG can be found at: http://www.resbank.co.za/Markets/MPG/Pages/default.aspx

Chapter 2: Top-down banking sector solvency stress test

Summary of the stress test

South Africa's banking sector is well positioned to withstand a historically severe, but plausible stress scenario. The results of the 2020 top-down (TD) solvency stress test[45] conducted by the SARB, in response to COVID-19, demonstrate a material reduction in bank profitability. Despite this, the aggregate capital adequacy position of the SIFI banks[46] is expected to remain above the minimum regulatory requirement. Therefore, these banks are expected to remain able to facilitate financial intermediation, even under a macroeconomic scenario of severe stress.

Purpose and scope

As part of its financial stability mandate, the SARB regularly performs solvency and liquidity stress tests to assess the resilience of the financial sector.[47] Stress tests are forward-looking exercises that aim to assess the resilience of financial institutions to severe yet plausible macroeconomic and financial shocks. As part of its 2020 assessment, the SARB conducted a TD solvency stress test to determine the potential impact of the COVID-19 pandemic and the associated national lockdown on the South African banking sector.

The 2020 TD solvency stress test exercise covered the six banks designated as SIFIs by the SARB. These banks had a combined market share of 91% of total banking sector assets as at 31 March 2020. The exercise was conducted over a three-year stress horizon, and entities were assessed on a bank solo basis.[48]

45 Top-down bank stress testing refers to a process where the SARB uses internally developed models to apply a set of macroeconomic stress scenarios to regulatory data, in a consistent manner across all banks. The other type of stress test is a bottom up exercise wherein the scenarios are designed by the SARB, but implemented by individual banks with their own respective models.

46 The SARB designated the following six banks as SIFIs in 2019: Absa, Capitec Bank, FirstRand Bank, Investec, Nedbank and Standard Bank. See also the second edition of the *Financial Stability Review* of 2019 for further details on the designation.

47 Liquidity stress testing complements solvency stress testing by assessing and monitoring the liquidity positions of banks against a set of systemic and non-systemic stress scenarios (see Box 6 for more information on the framework for liquidity stress testing).

48 This means that only domestically-originated banking operations were covered in the exercise.

The impact of the macroeconomic scenarios on bank solvency was comprehensively modelled. The impact on capital supply was assessed through the sensitivity of the components of profitability such as income (interest and non-interest-related), operating expenses and credit losses to various scenarios. In addition, from a capital demand perspective, the following risks were assessed: credit risk, market risk, counterparty credit risk, equity risk in the banking book, operational risk and other risk.[49]

Stress test scenarios

The SARB uses a Stress Testing Matrix (STeM) as a formal approach to risk identification and scenario design.[50] Following the identification of the respective shocks in the STeM, the SARB's core econometric model was utilised to obtain globally and domestically consistent macro-financial scenarios.

Three scenarios were considered during the exercise: a pre-COVID-19 baseline scenario, a COVID-19 baseline scenario and a stress scenario. The COVID-19 baseline and stress scenarios are very severe by historical standards (see Box 4 for a comparison against previous stress test scenarios). The pre-COVID-19 baseline scenario is based on the macroeconomic forecasts produced for the January 2020 MPC meeting – prior to the announcement of the national lockdown.[51] The COVID-19 baseline scenario is based on the forecast for the May 2020 MPC meeting. This scenario accounts for a significant economic impact from the national lockdown and the spread of COVID-19.[52,53] Finally, the stress scenario is an extension of the COVID-19 baseline scenario and provides for a more severe domestic and international economic downturn.

49 Other risk relates to risks on assets not already incorporated in the other risk types, for example, fixed assets.

50 The STeM is a risk assessment framework (similar to the Risk Assessment Matrix) that identifies key financial stability risks which can be quantified from a stress testing perspective.

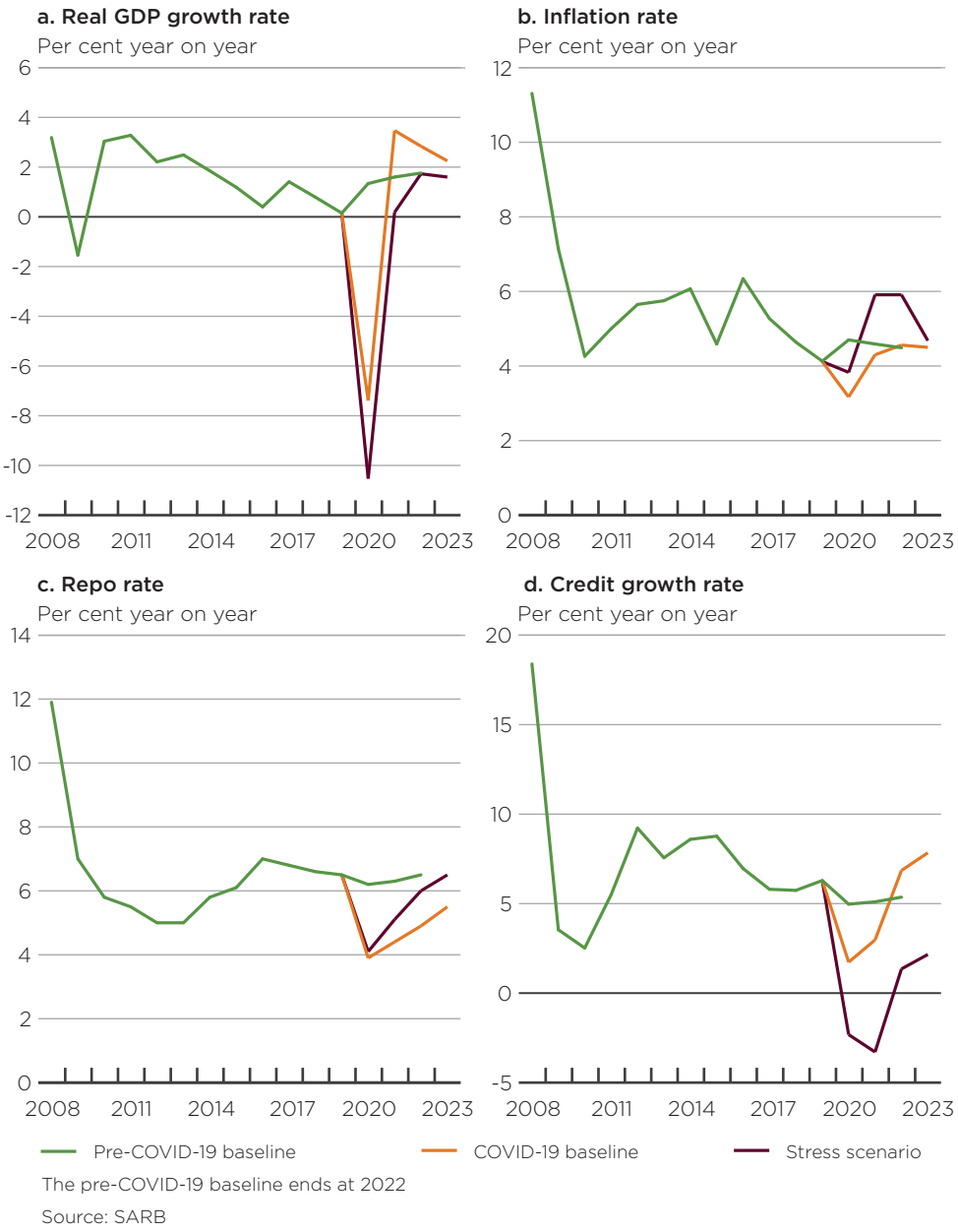
51 Statement of the Monetary Policy Committee – January 2020. http://www.resbank.co.za/Publications/Detail-Item-View/Pages/Publications.aspx?sarbweb=3b6aa07d-92ab-441f-b7bf-bb7dfb1bedb4&sarblist=21b5222e-7125-4e55-bb65-56fd3333371e&sarbitem=9691

52 Statement of the Monetary Policy – May 2020. http://www.resbank.co.za/Publications/Detail-Item-View/Pages/Publications.aspx?sarbweb=3b6aa07d-92ab-441f-b7bf-bb7dfb1bedb4&sarblist=21b5222e-7125-4e55-bb65-56fd3333371e&sarbitem=9946

53 Unconventionally, two baseline scenarios were used in the exercise. This is to reflect the economic scenarios prior to, and during COVID-19.

The stress scenario simulates a further deterioration of global and domestic economic activity beyond what is currently expected. In this scenario, COVID-19 causes continued global uncertainty and constrains confidence, resulting in a deeper contraction in global economic growth (than under the COVID-19 baseline). This adversely affects commodity prices, with the exception of the oil price, which is subjected to different supply and demand dynamics. Lower global growth and commodity prices weigh on domestic economic activity. Furthermore, in this scenario, the recovery in domestic economic growth takes longer (than in the COVID-19 baseline) due to an extended domestic lockdown period or a second wave of COVID-19 infections (see Figure 31, panel a). The sluggish economic recovery is expected to impact negatively on tax revenue collection, leading to a deterioration in government's fiscal position. This, alongside negative investor sentiment towards emerging market economies is projected to cause capital outflows and domestic currency depreciation, resulting in somewhat higher inflation and inflation expectations (Figure 31, panel b). To anchor inflation expectations, the SARB is projected to increase the policy rate quicker than in the COVID-19 baseline scenario (Figure 31, panel c). An overall lack of consumer and business confidence, higher government bond yields (due to higher fiscal risks), higher interest rates and higher unemployment levels, all contribute to lower consumption and investment expenditure. The high level of unemployment and significant deterioration in economic activity will cause credit extension to decline as consumers face debt service challenges and banks become more risk adverse. The relatively faster increase in interest rates is also expected to result in lower credit extension to households and corporates (Figure 31, panel d).

Figure 31: Stress scenario – evolution of key macroeconomic variables



The pre-COVID-19 baseline ends at 2022

Source: SARB

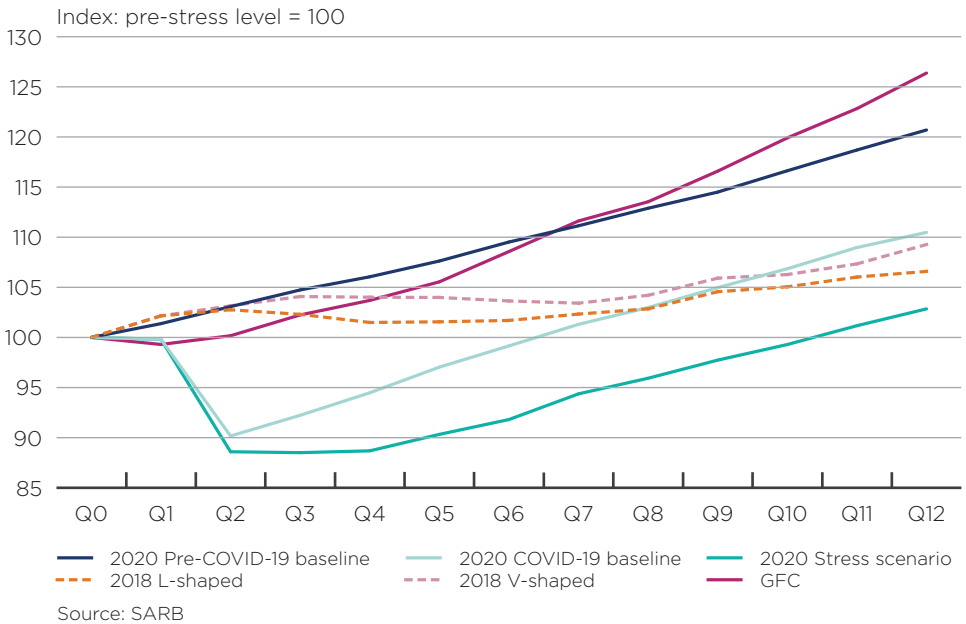
Box 4: Comparison of the macroeconomic scenarios used for stress testing

In this box, the 2020 TD solvency stress test scenarios are compared with South Africa's economic downturn during the global financial crisis and the scenarios incorporated into the 2018 SARB Common Scenario Stress Test (CSST). Being aware of the scenarios incorporated into a stress test is crucial for a fair and accurate interpretation of the stress test results. Stress scenarios are designed to represent 'severe but plausible' shocks, with the aim of providing insights into the resilience of the financial sector under stressed economic conditions. Given the weak starting point for the economy prior to COVID-19, the stress scenario developed in this environment is notable for its severity.

The 2018 CSST considered three macroeconomic scenarios. These included a baseline scenario and two stress scenarios. The first of these stress scenarios was a V-shaped recession, which included a contraction in global and domestic GDP growth, followed by a relatively rapid recovery. The second of stress scenario was an L-shaped recession, which included a shallower economic downturn with a slower recovery. The 2020 TD solvency stress test exercise also includes three macroeconomic scenarios, which are described in the scenario section above. Unconventionally, two baseline scenarios were used in the exercise to reflect the economic outlooks prior to, and during COVID-19.

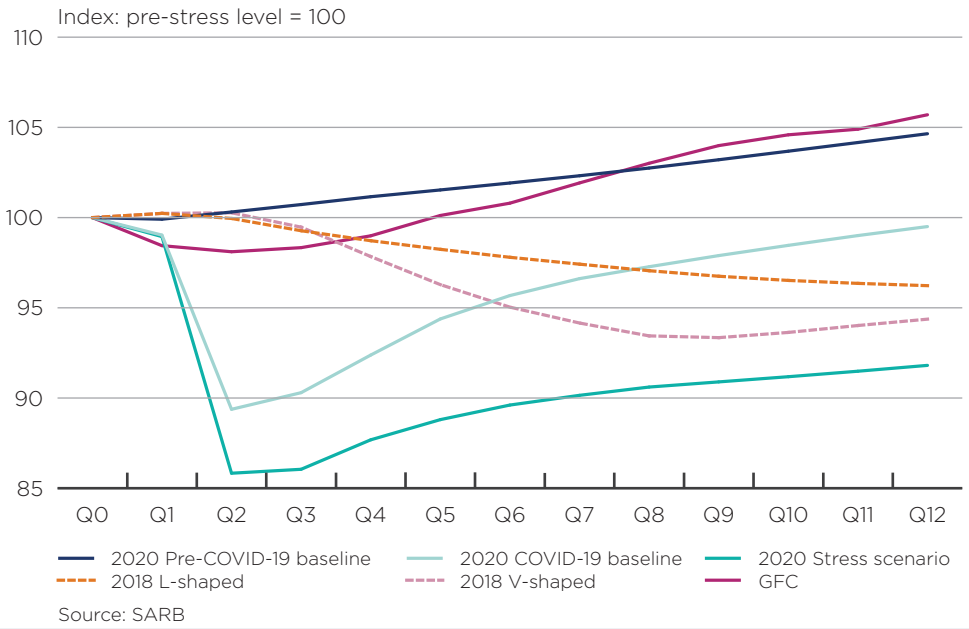
Scenarios are compared based on their impact on disposable income and real GDP. In Figures 32 and 33, the levels of nominal disposable income and real GDP are referenced against their starting points prior to the stress test (or pre-recession level in the case of the global financial crisis). Figure 34 depicts the depth of the GDP contraction for each scenario, which is the maximum decline in real GDP from the respective pre-stress levels.

Figure 32: The level of nominal disposable income across each scenario



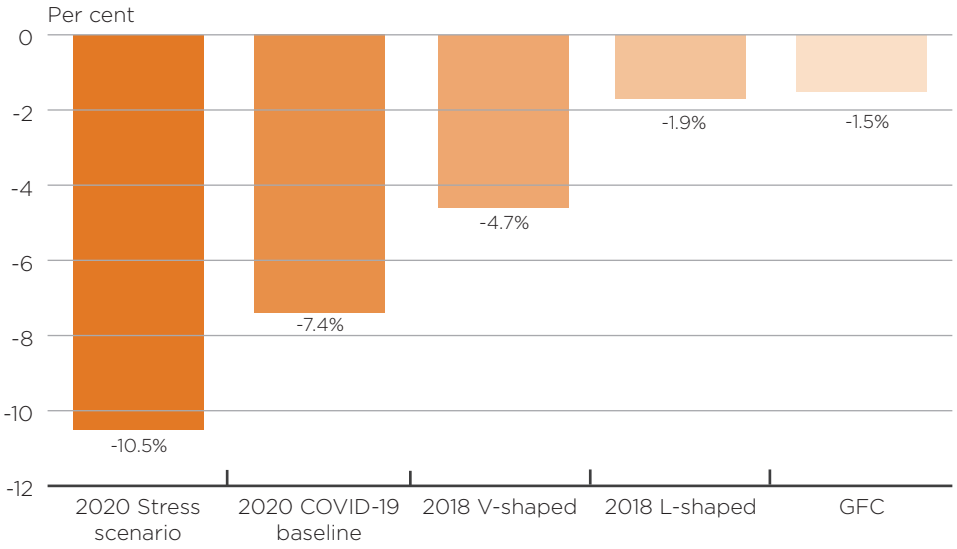
Source: SARB

Figure 33: The level of real GDP across each scenario



Source: SARB

Figure 34: Depth of GDP contraction under each scenario



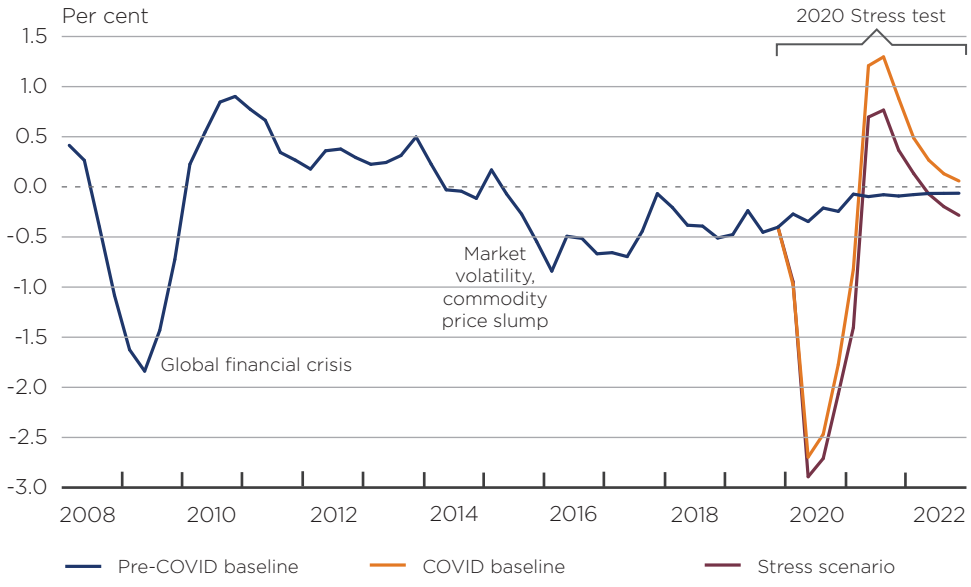
The scenarios used for the 2020 TD solvency stress test include extreme levels of economic stress, reflecting the severity of the COVID-19 pandemic. The anticipated economic impact of the COVID-19 pandemic, depicted by the COVID-19 baseline scenario, is significantly worse than that of the global financial crisis. Furthermore, the stress scenario used in the 2020 TD stress test is more severe than any of the scenarios used by the SARB in its 2018 CSST exercise (and indeed any exercise prior to that). Taking this context into account is important when interpreting the results of the 2020 TD stress test.

Methodology

The SARB conducted the 2020 TD solvency stress test using its Integrated Stress Testing Model (ISM). The ISM is an internally-developed proprietary tool used to model the impact of different macroeconomic scenarios on the solvency positions of banks. The ISM allows the SARB to project stressed capital supply and demand positions. In doing so, a stressed income statement, balance sheet and RWA for each Basel Pillar I risk type is projected. Additionally, the ISM incorporates a complete treatment of the IFRS 9 standard for credit provisioning measurement (see Box 5 for discussion on IFRS 9 and perfect foresight).

A South African Economic Conditions Index (ECI) was used to determine credit provisions. The ECI is built from a set of 40 macroeconomic variables in an attempt to capture all the features that affect South Africa's macroeconomy in one index. These variables are grouped into eight categories that represent the key macroeconomic variables that can affect banks' credit risk.[54] The ECI was used in the estimation of probabilities of default (PDs) which in turn were used in the calculation of provisions and credit RWA.

Figure 35: Economic Conditions Index for South Africa



Positive (negative) values indicate favourable (unfavourable) economic conditions.

Source: SARB

As with any stress test, certain assumptions underpin the outcomes of the 2020 TD stress test and assist in the interpretation of the results. Table 1 below summarises the most significant of these assumptions.

54 The categories are macroeconomic indicators, lending rates, deposit rates, credit extension, the exchange rate, the external sector, wealth and debt.

Table 1: Key assumptions underpinning the 2020 TD stress test

Category	Description
Capital	• The only source of additional capital allowed during the forecast horizon was the portion of retained earnings that had not been distributed as dividends. • No additional capital issuances were incorporated over the forecast horizon.
Distributions and unappropriated profits	• Dividends were presumed to be paid out in line with payout ratios in recent years, with the exception of 2020 (where no dividend payouts were assumed). • The balance of unappropriated profits at the reference date was excluded from the results of the stress test.
Credit risk	• New credit originations were assumed to grow in line with the exogenous growth in private sector credit extension. • No curing of exposures that have defaulted was allowed.
Management action	• No management action on behalf of the respective banks was factored into the results.

Box 5: IFRS 9 and the perfect foresight assumption for credit provisioning

The SARB has incorporated IFRS 9 into its 2020 TD solvency stress test for the first time. The IFRS 9 credit provisioning methodology, effective from 1 January 2018, was used in the 2020 TD stress test to estimate expected credit losses over the forecast horizon. Compared to the previous International Accounting Standard (IAS) 39, which was based on an incurred-loss methodology, IFRS 9 does not require a loss event to occur before a credit provision is raised. IFRS 9 calls for a forward-looking approach from banks when they are calculating expected credit losses (by basing these estimates on macroeconomic forecasts). This methodology requires banks to calculate expected credit losses over a 12-month period for exposures that are classified in stage 1 and over the lifetime of the exposure if classified in stages 2 or 3.[1]

The assumption of perfect foresight was used to determine expected credit losses in the 2020 TD solvency stress test. IFRS 9 defines an expected credit loss as the probability-weighted estimate of credit losses across a number of macroeconomic scenarios. In other words, the expected credit loss is determined by calculating expected losses for each macroeconomic scenario and then weighing these losses by the assumed probability of each scenario. An alternative approach to the probability-weighted approach, which is used specifically for stress testing due to its conservative nature and computational benefits, is the perfect foresight assumption. This assumption employs a single macroeconomic scenario that is known at the onset and projects the expected credit losses in accordance with the trajectory of the scenario over the forecast horizon. Consequently, credit provisions on existing exposures will be raised at the beginning of the scenario, based on its expected path.[2] In addition, further adjustments to credit provisions on existing exposures would be incorporated with the migration of exposures between stages over the remainder of the macroeconomic scenario.[3]

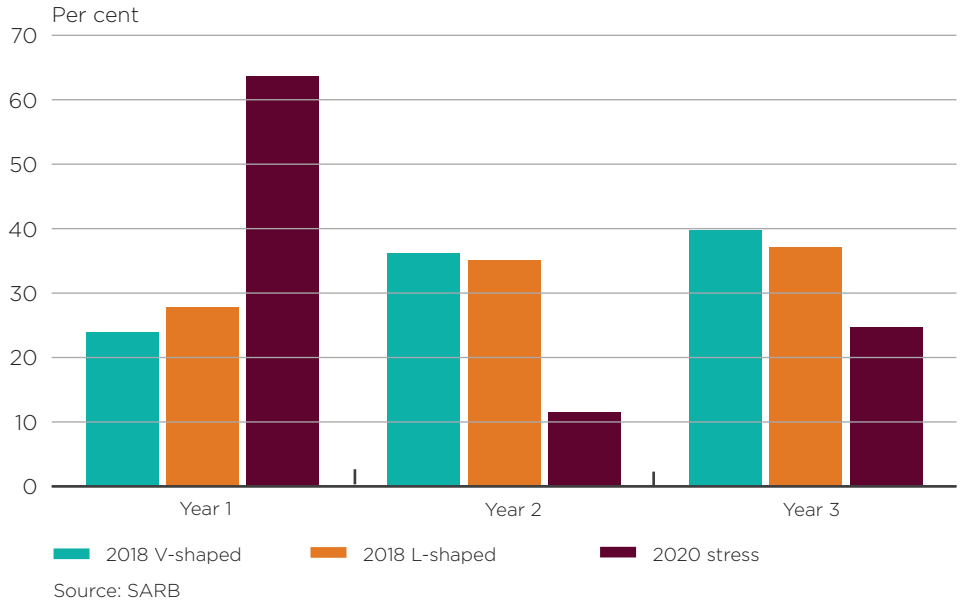
1 Stages defined in the IFRS 9 standard according to a set of specified criteria. If a loan is in good standing it is regarded as stage 1, and stages 2 and 3 reflect increased credit risk and credit impairment respectively. The standard can be accessed via: https://www.ifrs.org/issued-standards/list-of-standards/ifrs-9-financial-instruments/

2 Additional provisions may be raised on new exposures originated, based on the remaining path of the scenario after the respective origination dates.

3 This includes additional impairments due to a deterioration in credit quality and releases of impairments in the event of improvements in credit quality.

All things being equal, the introduction of IFRS 9 should not lead to an increase in total provisions over the stress test horizon, but should result in larger provisions in the first year of the stress test. With IAS 39, the impact of deteriorating credit quality is gradually incorporated into a bank's provisioning over a period of time. The introduction of IFRS 9 means that the impact of deteriorating credit quality is 'front-loaded' at the beginning of the stress horizon. In Figure 36, this feature is graphically demonstrated by comparing the distribution of credit losses over the stress horizon for the 2018 CSST and the 2020 TD solvency stress test. Due to the introduction of IFRS 9 in the 2020 TD stress test, the majority of the provisions have been raised in the first year of the horizon when the deterioration in future credit conditions is internalised. The level of provisioning across the three-year horizon in the 2018 CSST is more evenly distributed. Given the accelerated provisioning feature of IFRS 9, a sharp increase in provisioning at the beginning of the stress test results in a 'cliff effect', as credit losses fall sharply in later years.

Figure 36: Distribution of credit losses over the three-year forecast horizon



Source: SARB

Actual provisioning levels during the COVID-19 pandemic could differ from those projected by the 2020 TD solvency stress test due to the regulatory guidance provided by the PA. The use of IFRS 9 and the perfect foresight assumption in calculating expected credit losses could introduce procyclicality to the credit losses forecasted in the 2020 TD stress test. This means that the accelerated nature of provisioning during a stress event may hinder credit extension at a time when it is needed to support the economy.[4] To address potential procyclicality, the PA has provided additional guidance to banks, requesting that they avoid procyclical assumptions in their IFRS 9 expected credit loss modelling during the COVID-19 pandemic. This guidance acknowledges that banks may encounter challenges in generating reasonable and supportable short-term economic forecasts during this period. Given this guidance, provisioning levels experienced by banks during the pandemic could diverge from those projected by IFRS 9 and the perfect foresight assumption employed in the 2020 TD stress test (they are likely to be more evenly distributed over the forecast horizon). Nevertheless, the incorporation of these assumptions into the 2020 TD stress test is in line with international best practice[5] and ensures consistency of results, which is why the SARB has adopted this approach.

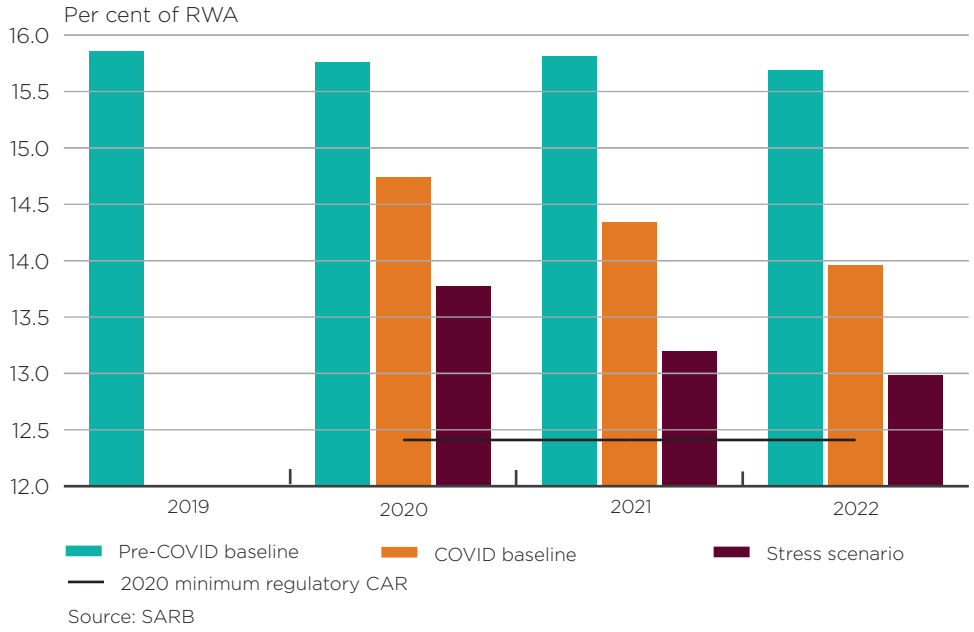
4 Note that additional provisions are a cost on the income statement of a bank, so a high level of provisioning can result in lower profits or even losses being incurred by the bank.

5 For example, see European Banking Authority. 2017. '2018 EU-Wide Stress Test'. https://eba.europa.eu/sites/default/documents/files/documents/10180/2106643/a72411ca-3d95-44d3-9c6a-2c36de7d482f/2018%20EU-wide%20stress%20test%20-%20Methodological%20Note.pdf

Results

On aggregate, banks are adequately capitalised to withstand a prolonged and severe economic disruption, underscoring the resilience of the sector. The weighted average total CAR for the SIFI banks deteriorates significantly in both the COVID-19 baseline and stress scenarios, but remains above the minimum prudential requirement of 12.4% throughout.[55] The aggregate CAR declines from 15.9% at the beginning of the scenario to 14% and 13% at the end of the COVID-19 baseline and stress scenarios respectively (see Figure 37). The main drivers of the deterioration in aggregate solvency in the stress scenario are demonstrated in Figure 38.

Figure 37: Aggregate weighted average CAR

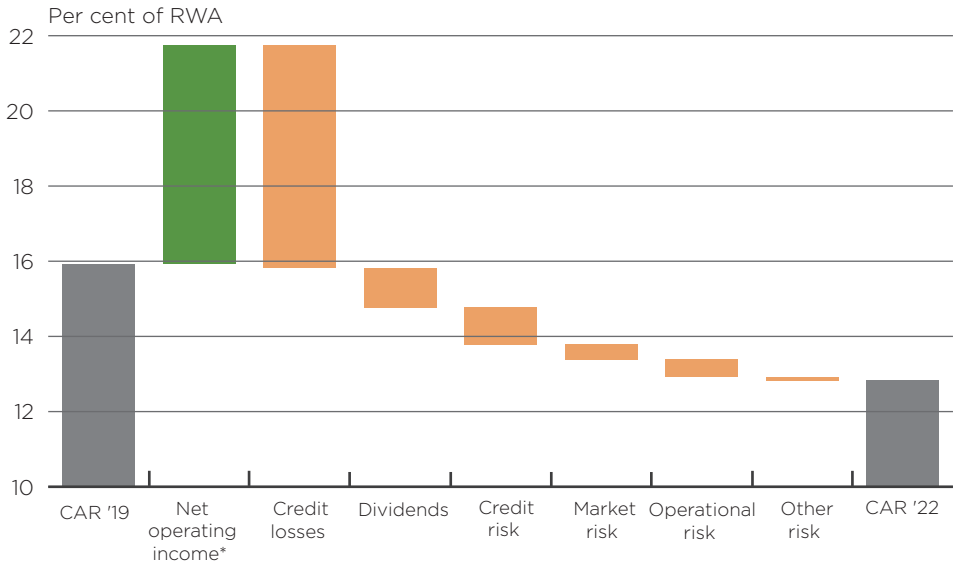


Source: SARB

Unappropriated profits were excluded from the exercise which, if included, would improve banks' capital positions during stress. Banks had an aggregate amount of R25 billion in unappropriated profits at the beginning of the exercise. If these additional funds were included in the regulatory capital base, it would improve the banks' average capital positions by approximately 0.9 percentage points.

55 This refers to the total minimum capital requirement (including all buffers) as at 30 April 2020, and is calculated on an asset-weighted basis. This differs slightly from the total minimum capital requirement cited in Chapter 1 as this figure only applies to the SIFI banks.

Figure 38: Decomposition of the movements in aggregated banks' CAR (stress scenario)



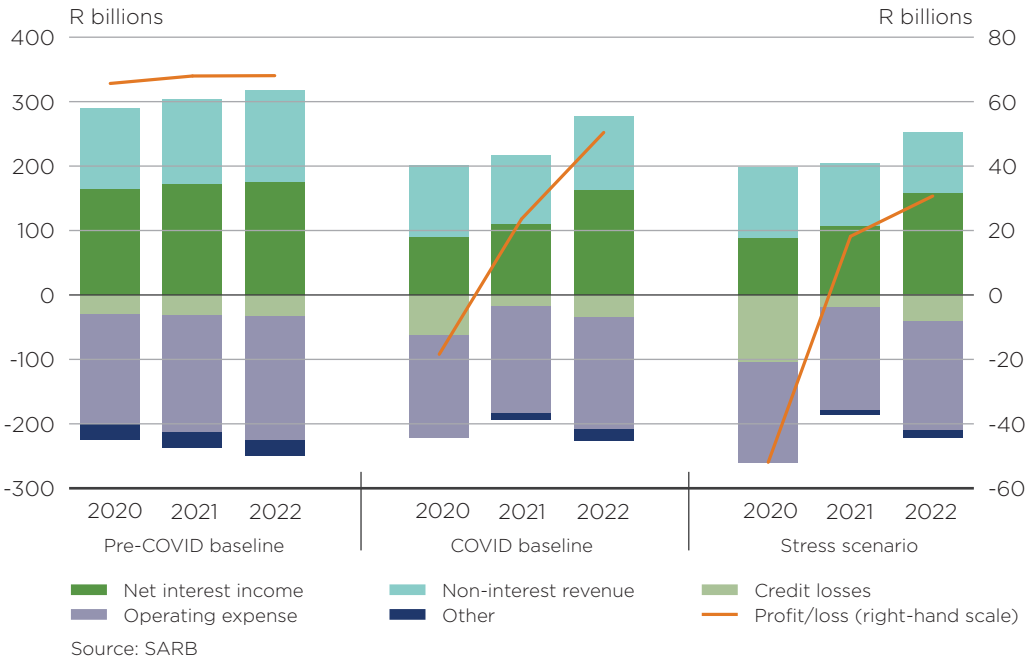
* Net operating income is calculated as the sum of net interest income, non-interest revenue, less operating and other expenses and taxation

Source: SARB

The deterioration in banks' capital positions reflects a significant decrease in profitability during the COVID-19 baseline and stress scenarios. Bank profitability plays an important role in the recovery from a stressed event as it contributes to the rebuilding of capital buffers while also enabling banks to continue extending credit, a key factor in the recovery of the broader economy. As a result, profitability trends are often considered to be as important as capital adequacy outcomes in the results of a stress test. In the COVID-19 baseline and stress scenarios, profitability is adversely impacted, mainly through decreased income (interest and non-interest income) and increased credit losses (see Figure 39). Net interest income growth is hindered by a squeeze on net interest margins due to the negative endowment effect from a lower interest rate environment than in the pre-COVID-19 baseline.56 Furthermore, the addition of more expensive forms of funding to compensate for the withdrawal of customer deposits during stress places additional downward pressure on net interest margins. Over the forecast horizon, non-interest income is constrained by lower new business volumes in both the COVID-19 baseline and stress scenarios.

56 Decreasing interest rates have a significant impact on bank earnings as the interest received on assets does not fully compensate for the increased costs associated with deposits and longer-term funding (i.e. capital).

Figure 39: Profit and loss breakdown

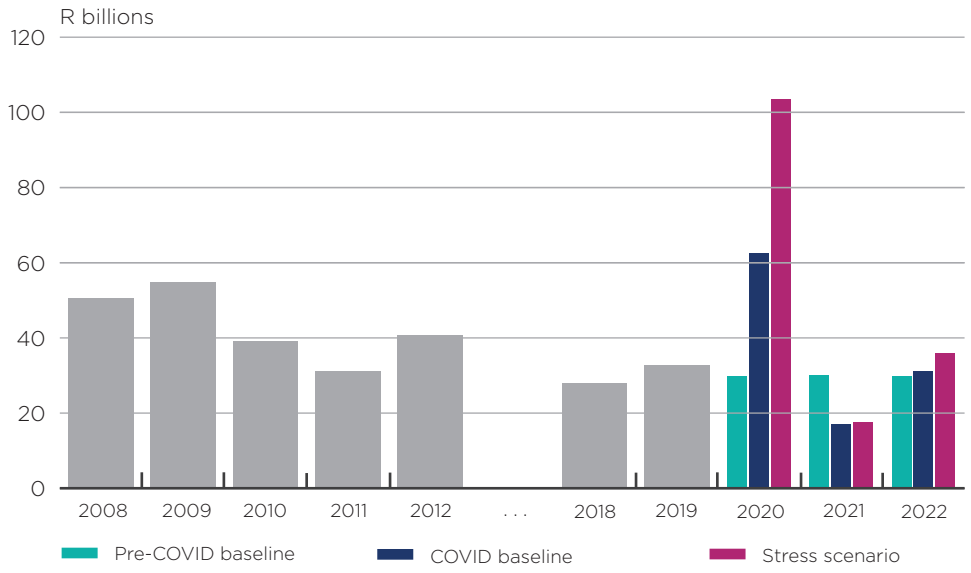


Source: SARB

While profitability improves in the second half of the COVID-19 baseline and stress scenarios, CARs remain under pressure due to increases in RWAs. RWA growth in the COVID baseline and stress scenarios is driven primarily by increased credit and market risk. Downward pressure on CARs is expected to persist until the second half of 2022 (under both scenarios), when aggregate profitability improvements start to outpace RWA growth and CAR positions begin to recover.

Credit losses are the single largest contributor to declining capital buffers during the exercise. A significant deterioration in the ECI in 2020 leads to a substantial increase in credit provisions, with credit losses increasing markedly in 2020 under the COVID baseline and stress scenarios (Figure 40). The level of credit losses in 2020, for both scenarios, is higher than during the global financial crisis (in real terms) which emphasises the magnitude of the adverse economic impact caused by COVID-19. As the economy recovers in 2021, some provisions are released, resulting in lower credit losses across the remainder of the stress test horizon.

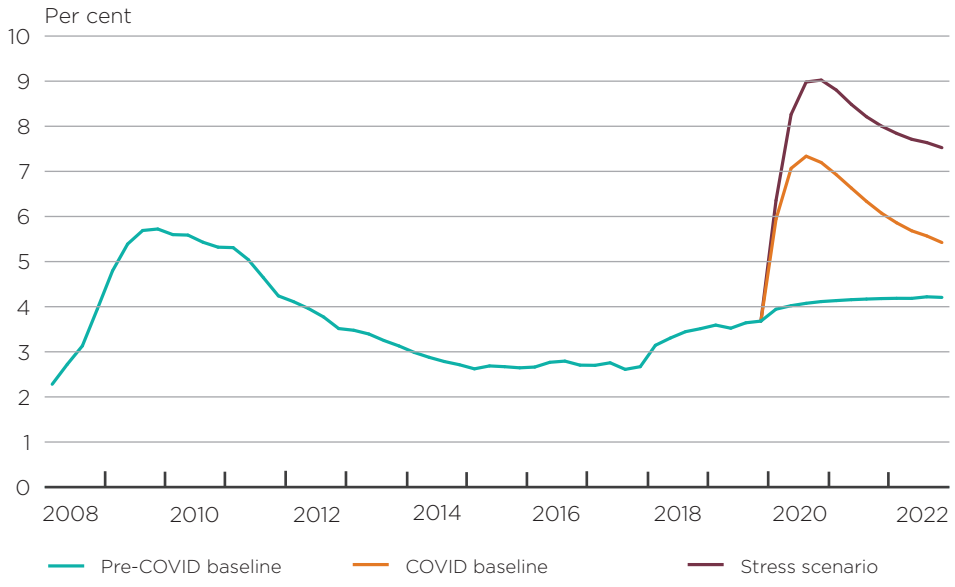
Figure 40: Aggregated inflation-adjusted credit losses



Credit losses are expressed in constant 2020 prices
Source: SARB

In 2020, the aggregate NPL ratio exhibits a similar pattern to that of credit losses. Under the COVID baseline and stress scenarios, the NPL ratio increases sharply between the first and last quarters of 2020, and begins to trend downwards from the first quarter of 2021 onwards as the ECI starts to improve (see Figure 41).

Figure 41: Aggregated NPL ratio



Source: SARB

Conclusion

Given the imposed assumptions and the fact that excluded unappropriated profits provide an additional layer of protection for banks during stress, the 2020 stress test provides a conservative estimate of the solvency position of SIFI banks. The results of the exercise confirm that South Africa's SIFI banks hold sufficient capital buffers to withstand a macroeconomic shock of unprecedented severity. Macroprudential stress tests are a key component of the SARB's approach to assessing systemic risk on a forward-looking basis. Apart from the solvency stress test, the SARB regularly conducts liquidity stress tests. Box 6 provides an overview of the liquidity stress testing methodology and results.

Box 6: Liquidity stress testing at the South African Reserve Bank

Liquidity stress testing is an important element of the SARB's stress testing framework. In response to the COVID-19 pandemic, the liquidity monitoring framework was enhanced.

One characteristic of banks' resilience to liquidity shocks is the ability to manage expected short-term cash outflows during a stressed period. The short-term cash flow coverage ratio (STCF) is a tool developed to measure this aspect of liquidity resilience. The STCF leverages off the liquidity coverage ratio (LCR) prescribed under the Basel III standard. The LCR measures whether a bank will have sufficient high-quality liquid assets (HQLA) to cover expected net cash outflows over a 30-day period, under a particular set of stress factors. In the STCF, these stress factors are adjusted to reflect various potential liquidity stresses for South African banks. Outputs from various STCF stressed scenarios are compared to the regulatory LCR reported by South African banks, which form the baseline for the exercise.

The scope of the liquidity stress test covers various sources of liquidity risk. The STCF covers both funding liquidity risk and market liquidity risk. The liquidity stress test is conducted on a top-down basis and includes the six designated SIFI banks.

The STCF metric generally considers two types of stress scenarios, of which one is systemic and the other is idiosyncratic in nature. The systemic scenarios seek to simulate an industry-wide liquidity stress event that is assumed to impact the entire banking industry simultaneously. The idiosyncratic scenarios are assumed to impact each bank in isolation, while other banks in the sector are assumed to maintain relatively healthy liquidity positions.

The systemic scenarios are calibrated to simulate a system-wide run on retail deposits, with a material spillover to corporate customer withdrawals and a shortening in duration of bank funding. Overlays are applied to the run-off factors for retail deposits as well as retail credit facilities to simulate withdrawals with differing degrees of severity. Furthermore, decreased inflow factors for retail and corporate deposits are simulated alongside varying haircuts on the different types of HQLA held by banks.

The need for idiosyncratic scenarios is motivated by the varying liquidity management strategies of banks. A potential liquidity outflow for an individual bank is modelled through a combination of retail and wholesale deposit outflows and additional haircuts applied to HQLA. Compared to the systemic scenario, higher run-off rates from corporate customers are assumed as funds are expected to flow out of the distressed bank to other banks (this event would not impact all banks simultaneously). A subsequent response from retail consumers is added as the loss of confidence in an individual banking institution spreads to the general public.

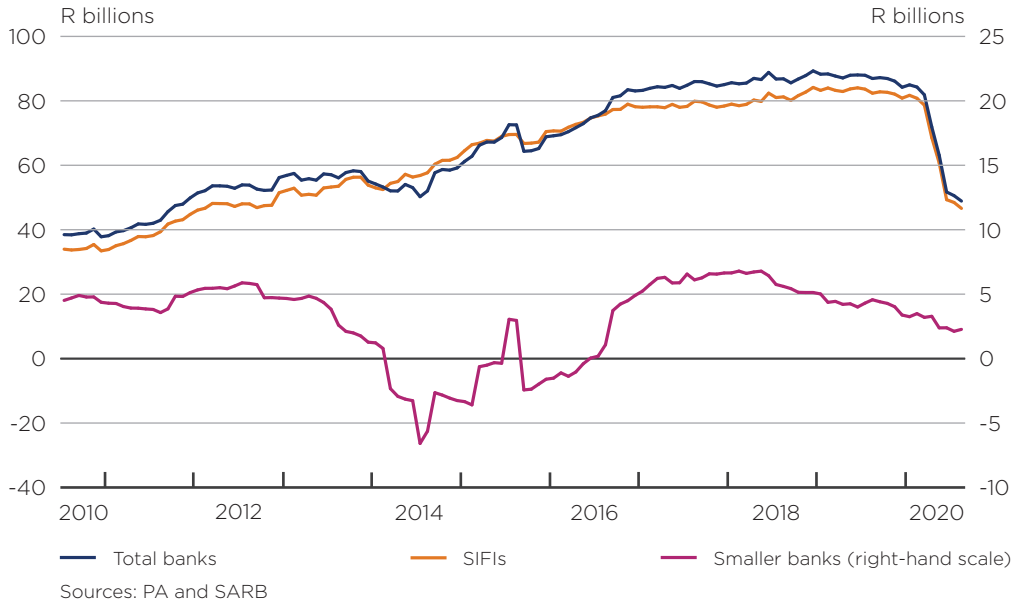
Ongoing liquidity stress testing confirms the resilience of domestic banks to both of the aforementioned scenario types. The SIFI banks have maintained healthy short-term liquidity positions to date and, based on the STCF monitoring, can adequately navigate the systemic and idiosyncratic stress scenarios that are regularly being applied. Liquidity risks tend to materialise quickly and can rapidly destabilise institutions with underlying vulnerabilities (e.g. those overly reliant on short-term funding). Therefore, regular monitoring of the STCF (under various potential scenarios) is an important part of the SARB's stress testing tool kit, and provides an additional layer of information regarding the resilience of South Africa's SIFI banks.

Chapter 3: Sectoral overview

Banking sector

Although there has been a significant decline in operating profit following the lockdown, the banking sector remained profitable as of August 2020. The banking sector's operating profits have declined sharply following the lockdown in March 2020, to levels last reported eight years ago (see Figure 42). In August 2020, operating profits were 44% lower than at the same time in 2019. This was mainly due to a sharp increase in credit losses and small reduction in non-interest revenue, which was offset to some extent by a slight drop in operating expenses. The deceleration in profitability was most pronounced among the smaller banks (those that are not designated as SIFIs), with total operating profit in August 2020 having been 50% lower than at the same time in 2019.

Figure 42: Operating profit of the total sector, SIFI banks and smaller banks



Sources: PA and SARB

Bank credit extension remains positive due, in part, to credit restructuring. Private sector credit extension growth slowed to a 10-year low of 3.9% y/y in August. The sizable relief measures provided, to the private sector, by commercial banks (including the restructuring of credit agreements through the postponement of payment obligations) have helped to avert a contraction in credit growth. This is because these measures (alongside regulatory adjustments to the treatment of such measures under COVID-19) have seen the value of loan impairments being contained. If the value of impairments increases, banks are required to write down the value of these loans (when there is no reasonable expectation of recovery), resulting in lower growth (or a decline) in the stock of credit outstanding. Thus, credit growth could still deteriorate in the months ahead if loan impairments increase.

Demand for mortgages, instalment sale agreements and leases has increased following the easing of lockdown restrictions. During August 2020, applications for mortgages and instalment sale agreements were considerably higher than their average monthly levels for the preceding two years. While average monthly pay-outs for these loans during 2020 (year to date) have been lower than those of the previous two years, the pay-outs in August 2020 moved closer to historical levels. It therefore appears that the supply of credit is normalising alongside improved demand.

Table 2: Monthly applications for, and pay-outs of mortgages, instalment sale agreements and leases

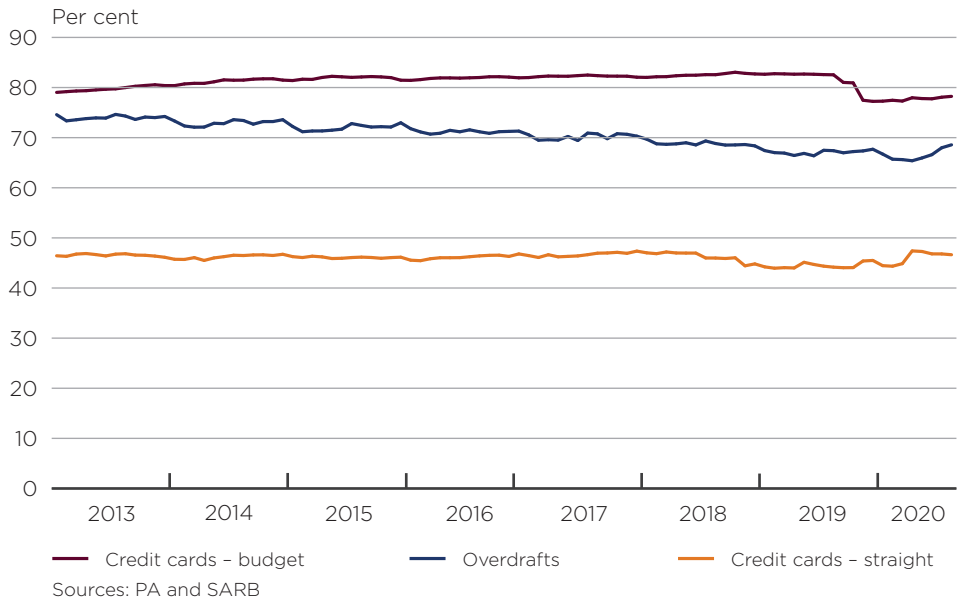
	Applications		Paid out	
	Number	Value	Number	Value
	thousands	R billions	thousands	R billions
Mortgages				
Actual for August 2020	86.1	101.7	14.2	21.2
Monthly average for 2020	64.1	77.1	10.3	17.2
Monthly average for 2019	60.0	72.9	14.1	22.1
Monthly average for 2018	57.6	69.8	14.6	21.3
Instalment sale				
Actual for August 2020	563.4	161.2	41.5	13.9
Monthly average for 2020	438.0	123.5	34.0	11.4
Monthly average for 2019	522.7	146.2	46.3	15.0
Monthly average for 2018	476.3	132.9	47.3	14.8
Leases				
Actual for August 2020	5.0	1.7	0.6	0.3
Monthly average for 2020	4.7	1.7	0.9	0.4
Monthly average for 2019	6.9	3.3	1.9	0.7
Monthly average for 2018	7.0	3.2	1.5	0.6

Source: SARB, PA

Since the lockdown in March, consumers and corporates have not meaningfully changed their usage of available credit facilities. Figure 43 shows the undrawn balances[57] of overdraft and credit card facilities as a percentage of the total credit facility available. The usage of undrawn facilities has been relatively stable since the start of 2020. It is possible that the significant restructuring of credit agreements that has taken place in recent months has relieved pressure on borrowers to the extent that the increased use of credit facilities has not been required. It may also be the case that banks have tightened credit limits to protect unutilised facilities.

57 An undrawn balance is the amount of credit that is available for the consumer's use. For example, should a credit card have a R100 limit and the consumer uses R20 of the limit, the undrawn facility is R80 (R100-R20).

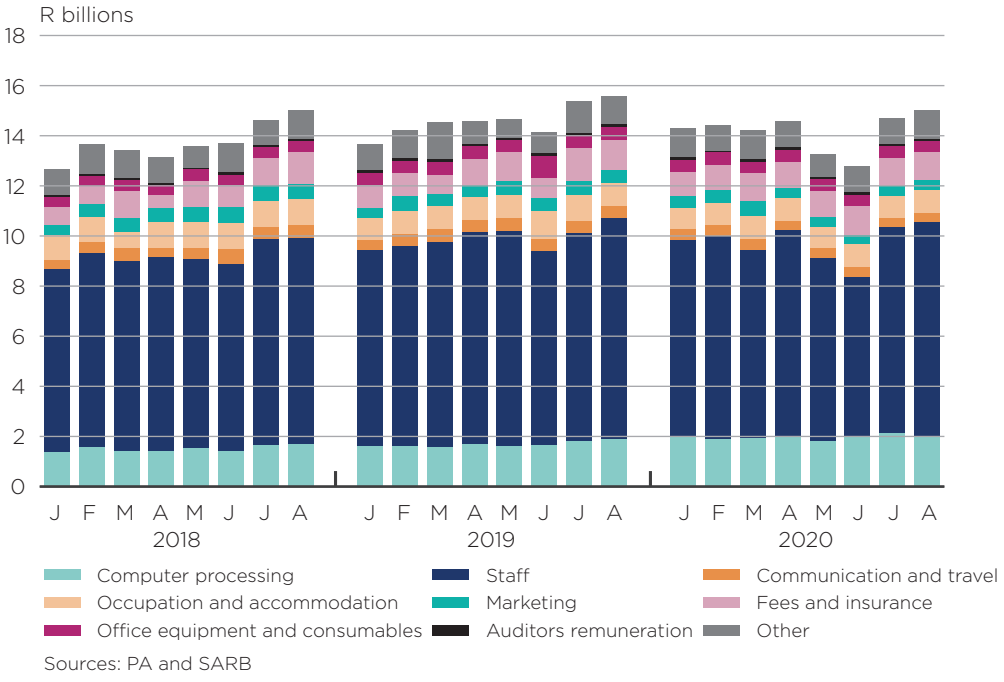
Figure 43: Undrawn credit as a percentage of total available credit for overdrafts and credit cards



Sources: PA and SARB

The banking sector remained operationally resilient during the lockdown period, despite moves to reduce operating costs. Average operating expenses have declined by almost 3% for the eight months to August 2020 compared to the same period in 2019 (see Figure 44). This was largely driven by a reduction in staff operating costs during May and June 2020, at the height of the lockdown. Although operating expenses were reduced, the sector has remained operationally resilient during the lockdown period. As of 21 September 2020, banks have reported almost 8 800 COVID-19 infections and 32 fatalities. Furthermore, over 50% of the staff of the five largest banks were working remotely during stages 5, 4 and 3 of the national lockdown. Despite these operational challenges, the interbank market has remained functional. Daily settlements have continued as normal and all significant margin calls were met, while no material disruptions to, or breaches of, banks' information technology systems were reported.

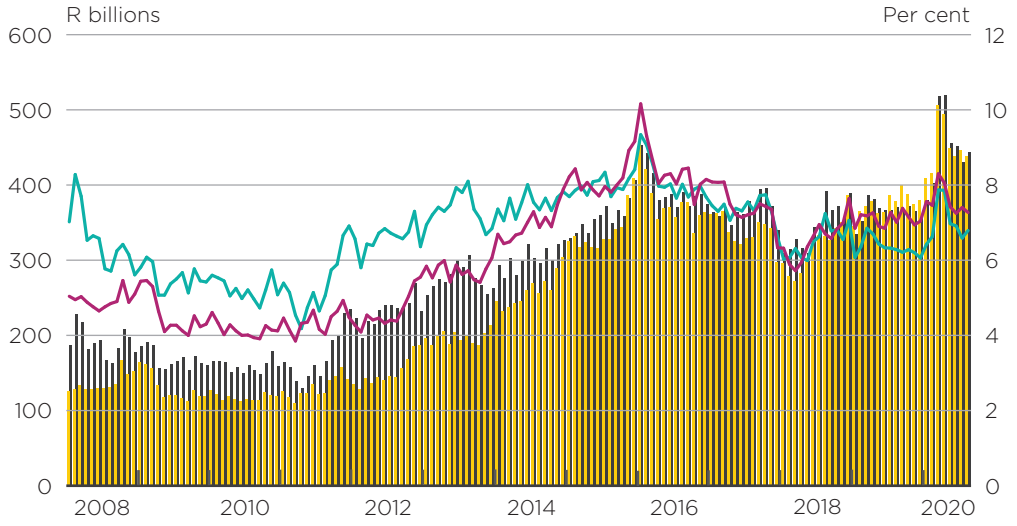
Figure 44: Monthly operating expenses of the banking sector



Sources: PA and SARB

The foreign-currency position of the banking sector increased significantly during the first quarter of 2020, as the rand depreciated against developed market currencies, but has since moderated. Foreign-currency loans and funding increased by 33% and 46% respectively from December 2019 to peak at R505 billion in March 2020 and R520 billion in April respectively (see Figure 45). The substantial increases were largely due to a depreciation of the rand exchange rate, resulting in the highest reported nominal foreign-currency exposures in at least 12 years. However, for the first half of 2020, foreign-currency loans and funding remained relatively low as a percentage of total assets, averaging 7.6% and 7% respectively. From a financial stability perspective, the fact that the banking sector's reliance on foreign-currency funding is not large, and that its foreign exchange assets and liabilities positions are fairly well matched, suggests that the sector's exchange rate risk is relatively low.

Figure 45: Foreign currency position of the banking sector



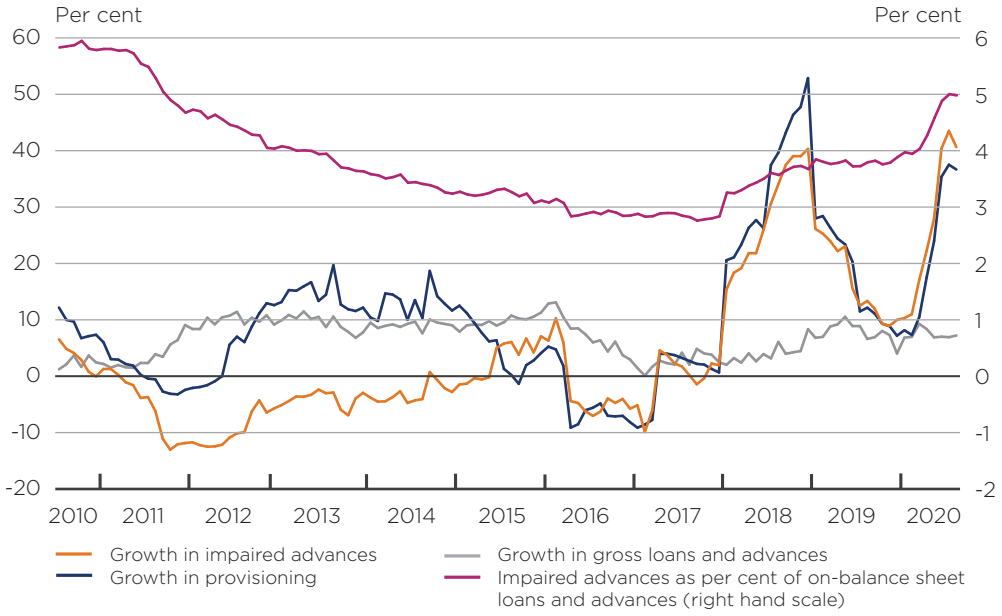
Sources: PA and SARB

Credit risk has increased significantly in bank loan portfolios. Impaired advances[58] as a percentage of loans and advances, a key indicator of credit risk, has increased from an average of 3.8% for the 12 months to March 2020 to 5% in August 2020. This ratio is approaching its 2009 peak of almost 6%. Increasing credit risk in the sector could be systemic if there are inadequate provisions for the losses arising from defaulting loans. The sector's provisioning[59] grew significantly after the implementation of IFRS 9 in 2018, and the rate of growth has accelerated again following the nation-wide lockdown in March 2020. Figure 46 shows that since July 2019 the growth rate of provisioning has broadly tracked the upsurge in impaired advances. The credit restructured by the banking sector is not regarded as impaired advances, so the rate of provisioning growth could continue to rise over the coming months as these restructured loans become payable.

58 Impaired advances are advances in respect of which the bank raised a specific impairment, and include any advance or restructured credit exposures subject to amended terms, conditions or concessions that are not formalised in writing. COVID-19 credit restructures are excluded from impaired advances unless a stage 3 specific credit impairment has been raised against the exposure.

59 Provisioning (also called credit impairments) is an accounting concept, which is, effectively, an allowance made against losses on loans that have been identified as bad or doubtful, including provisions made against groups of loans based on their age.

Figure 46: Impaired advances and provisioning in the banking sector



Sources: PA and SARB

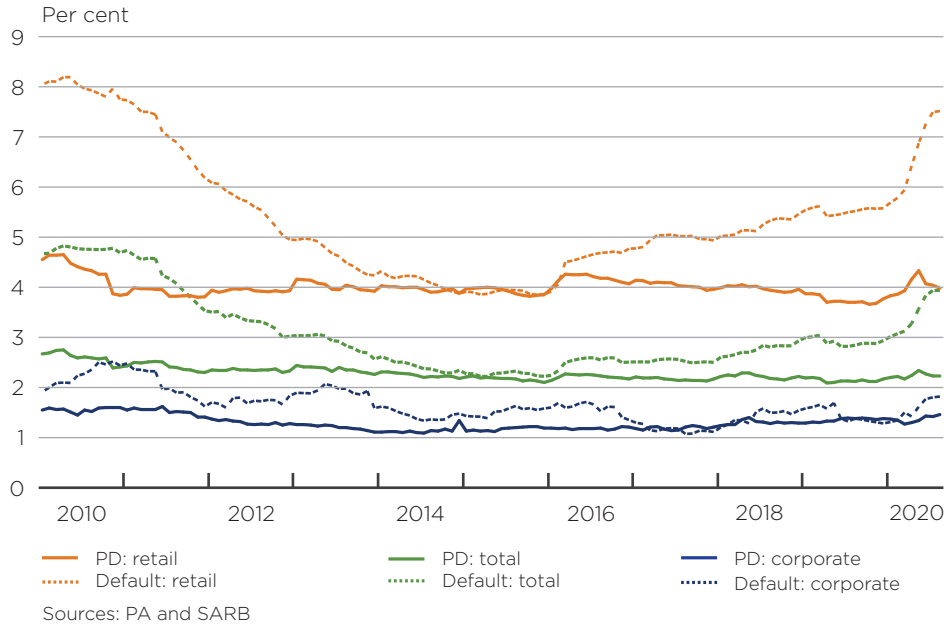
Most large banks use internal models to predict their loan portfolio's probability of default (PD), however, these forward-looking PDs are well below the current default experience.[60] Banks that use internal models (so called internal ratings based (IRB) banks) for estimating credit risk in their loan portfolios calculate a through-the-cycle[61] forward looking PD.[62] PDs are a key input into the calculation of a bank's minimum regulatory capital requirement. Figure 47 indicates that the forward looking PD for IRB banks' total portfolios has been lagging the actual default ratios, particularly for the retail portfolio. Through the cycle, PDs would be expected to be below the actual default experience during a heightened period of economic stress. Nevertheless, this divergent trend does highlight the emerging pressure on banking sector earnings and capital. The PA is closely monitoring this trend.

60 Default ratios show the banks' actual default experience and are calculated as defaulted exposures as a percentage of their exposure at default. Defaulted exposures are reported by the eight banks that are authorised to use the internal ratings-based (IRB) approach to calculate their minimum regulatory capital for credit risk.

61 A through-the-cycle PD measures the PD over a long term horizon.

62 Probability of default indicates the average percentage of obligors that are expected to default in the course of the next year. PDs are used to calculate the credit risk-weights and, ultimately, minimum regulatory capital requirements for banks.

Figure 47: Probabilities of default and default ratios

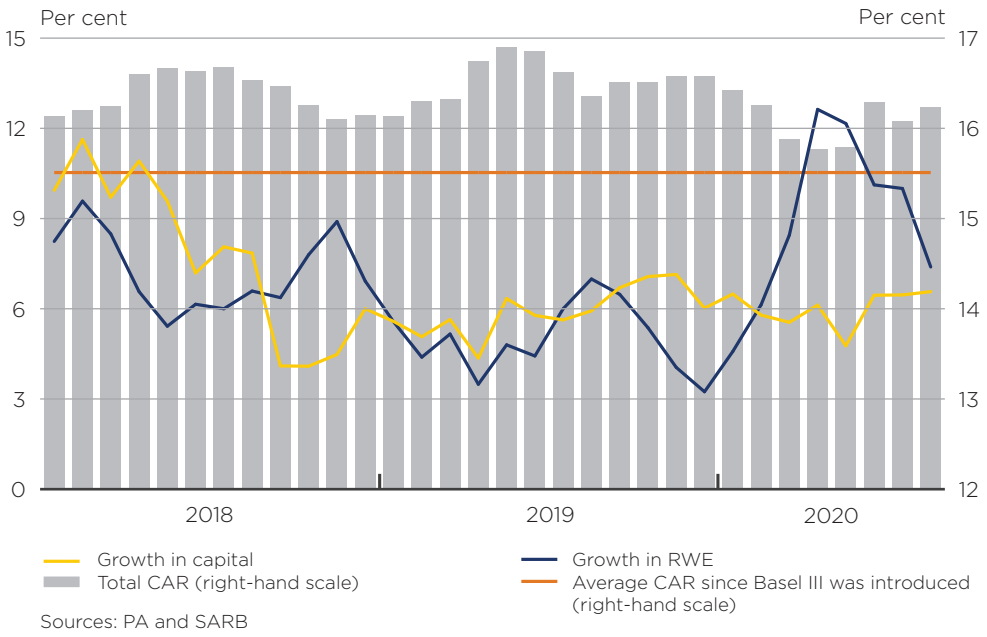


Sources: PA and SARB

The sector's capital adequacy ratio (CAR) remains healthy. The banking sector's CAR declined by almost 1 percentage point between December 2019 and April 2020, but has partially recovered since (see Figure 48). Although risk-weighted exposures have been increasing (largely due to rising market and credit risk) during this period, regulatory capital has also increased in recent months, causing the CAR to rise. However, loss absorbing capital has not increased significantly. About 50% of the increase in regulatory capital is a result of the large general provisions being held by banks.[63] Other reasons for the increase in regulatory capital are increases in paid-in capital (18%) and gains on cash flow hedges (17%). The sector has issued new capital since April 2020 (R890 million of tier 2 capital), but these new issuances have been a relatively minor source of new capital. The 2020 solvency stress test has established that SIFI banks are likely to remain adequately capitalised over a three-year horizon. However, the sector needs to be profitable in order to rebuild any loss absorbing capital that is depleted during this challenging time. The degree to which this can happen will be contingent on the pace of economic recovery.

63 Credit provisions, which exceed expected losses, qualify as regulatory capital.

Figure 48: Banking sector CAR, growth in capital and growth in RWE



Sources: PA and SARB

Non-bank financial institutions

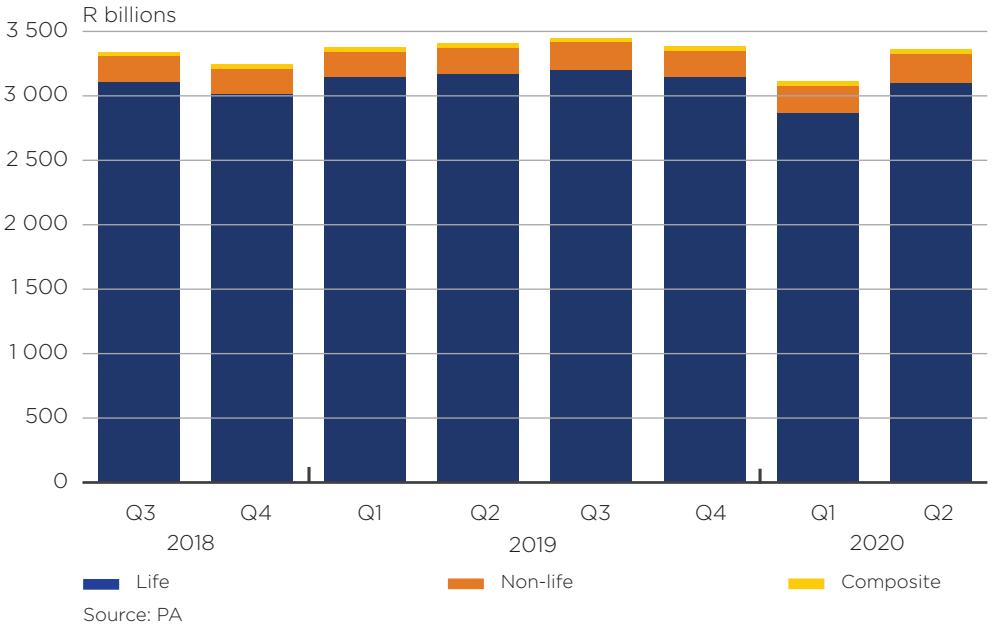
This edition of the *FSR* will cover the following non-bank financial institution sectors: insurance, collective investment schemes (CISs) and financial market infrastructures (FMIs).

Insurance sector

Life insurers hold the vast majority of insurance sector assets, but both life and non-life insurers have the potential to be systemically important. In the second quarter of 2020, life insurers held more than 92% of the insurance sector's assets, which amounts to more than R3 trillion (see Figure 49). Non-life insurers held a little over 6% and composite insurers held slightly more than 1% of insurance sector assets. Nevertheless, both life and non-life insurers have the potential to pose systemic risk. This is because systemic risk refers to both the potential for a firm's failure to cause adverse repercussions for the broader economy, and the risk that its failure could impair the intermediation of important financial services. In the case of life-insurers, the large value of asset holdings means that these firms play an important role in funding government and the private sector as well as participating in financial markets (thereby supporting liquidity in these markets). Moreover, as South Africa has a concentrated life insurance sector (the five largest companies hold more than 70% of total life insurance assets), there is a risk that the failure of a firm could result in a large loss of wealth or income for individuals reliant on life, income or disability insurance cover. In the case of non-life insurers, the asset size of the industry is lower, at R221 billion (in June 2020), but remains significant. Equally important is that these firms provide various lines of insurance which are essential for businesses and households. Certain lines of insurance are only provided by a small number of firms, thus the rapid exit of one or more non-life insurers could pose challenges to financial

intermediation and the extent to which firms and households in South Africa are able to insure against material risk.

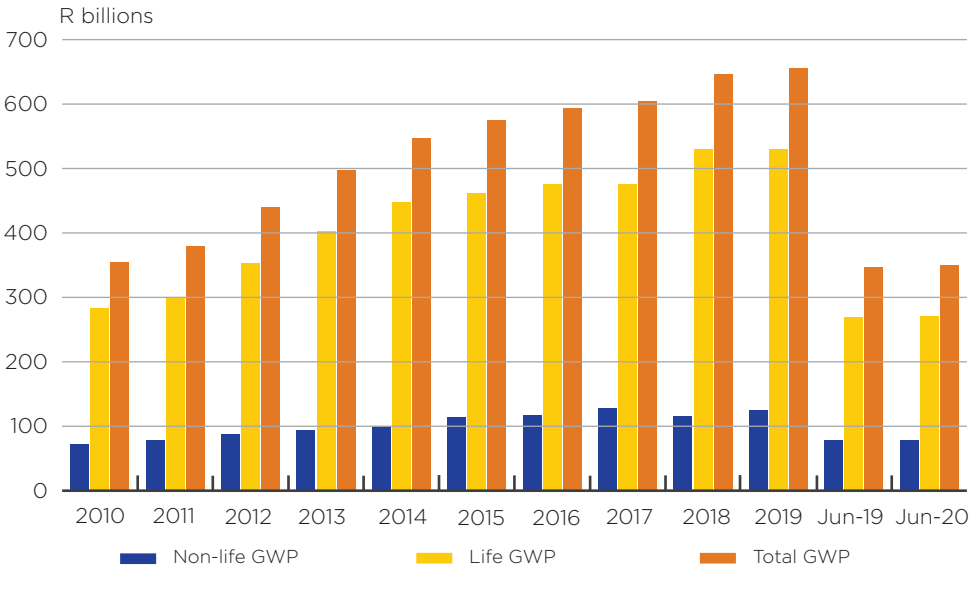
Figure 49: Insurance sector assets



Source: PA

Insurance premium income has stagnated. The level of gross written premiums for both life and non-life insurers was marginally higher in the first half of 2020 compared with the same time in 2019. Life insurance premiums increased by 0.8% y/y, while non-life insurance premiums fell by 0.1% y/y in the first half of 2020. Given the financial pressure on households, caused by COVID-19, this is a reasonably strong performance for the sector. However, the full effect of weaker economic activity on insurance income might only be evident in the second half of the year.

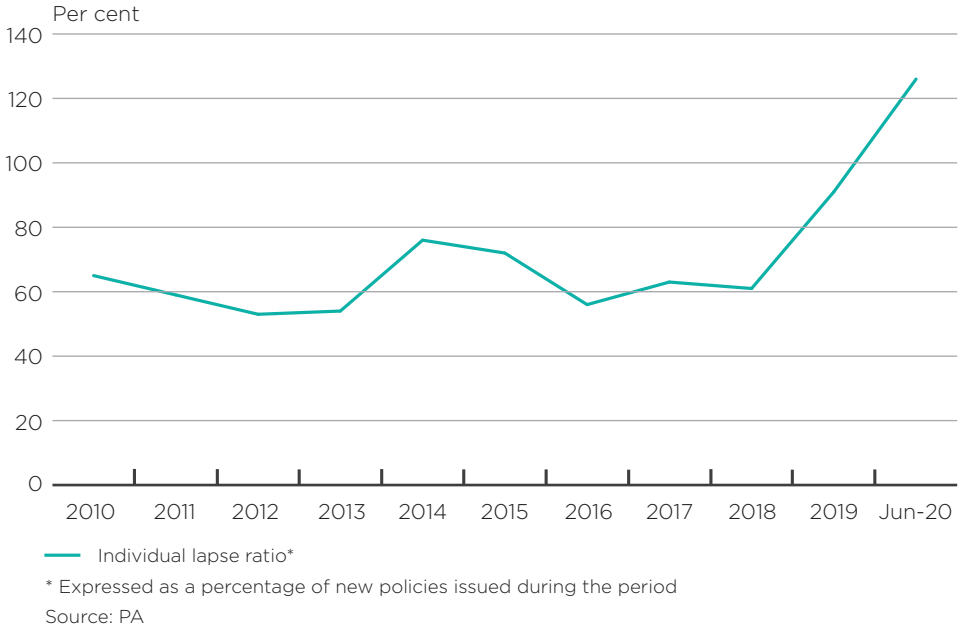
Figure 50: Insurance sector gross written premiums



Source: PA

The life-insurance industry is facing more lapses than new policies written. For the first time in over a decade, life insurers have recorded a policy lapse ratio in excess of 100%, at 126% in June 2020 (see Figure 51). If this trend continues, it is likely that the gross written premium and asset growth of the industry will come under further pressure.

Figure 51: Life-insurance policy lapse ratio



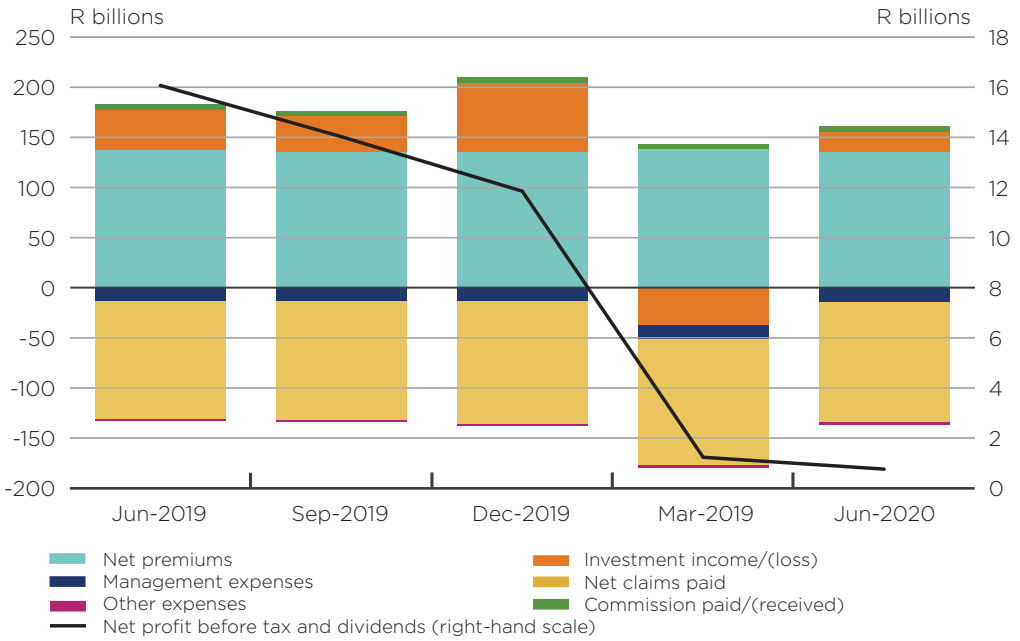
* Expressed as a percentage of new policies issued during the period

Source: PA

The profitability of life insurers has fallen sharply in the first half of 2020. Net profit before tax (measured on a 4-quarter moving average basis), moderated to only R800 million in June 2020, from R11.9 billion at the end of 2019.[64] The key driver of weaker profitability was pressure on investment income, which turned negative in the first quarter of 2020, before partially recovering in the second quarter of 2020. Life insurance assets are invested mainly in equities and investment funds. These investments experienced a significant loss of value during the market dislocation caused by COVID-19. Unrealised losses (or gains) are reflected on the income statement of insurers, highlighting the sensitivity of their profits to market fluctuations.

64 On an unsmoothed basis, life insurers reported a loss of approximately R16 billion in the first half of 2020.

Figure 52: Life-insurance profits and selected drivers thereof



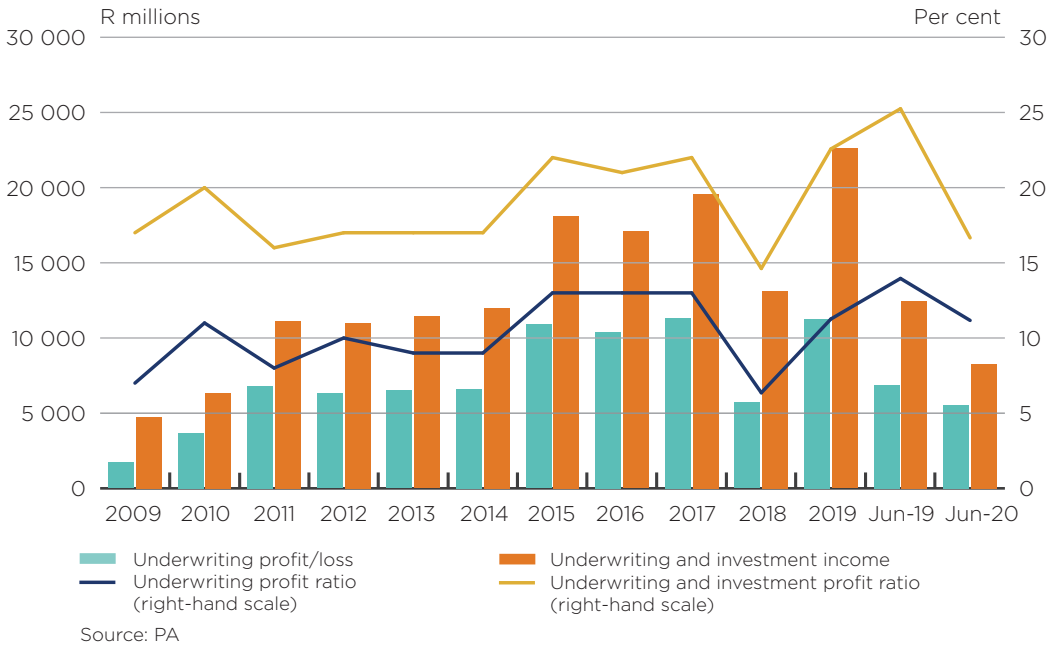
The data in this chart are recorded as a 4-quarter moving average. Not all subcomponents of net profit are included in the chart, thus the various subcomponents may not sum to the net profit figure.

Source: PA

Non-life insurance underwriting profits have moderated, but remained healthy in the first half of 2020. The underwriting profit ratio[65] of the non-life insurance sector was at 11% in June 2020, which is roughly in line with both its 2019 and 10-year average. In part, this relatively healthy underwriting profit ratio reflects a favourable insurance claims experience for the two most important lines of non-life insurance (motor vehicle and property) as the national lockdown resulted in less movement of people and goods. As the lockdown measures have eased in recent months, it is likely that claims for the second half of 2020 will be higher than in the first half of the year. Nevertheless, the continued profitability of the non-life sector is an encouraging development under current conditions.

65 This ratio is underwriting profits measured as a share of net earned premiums.

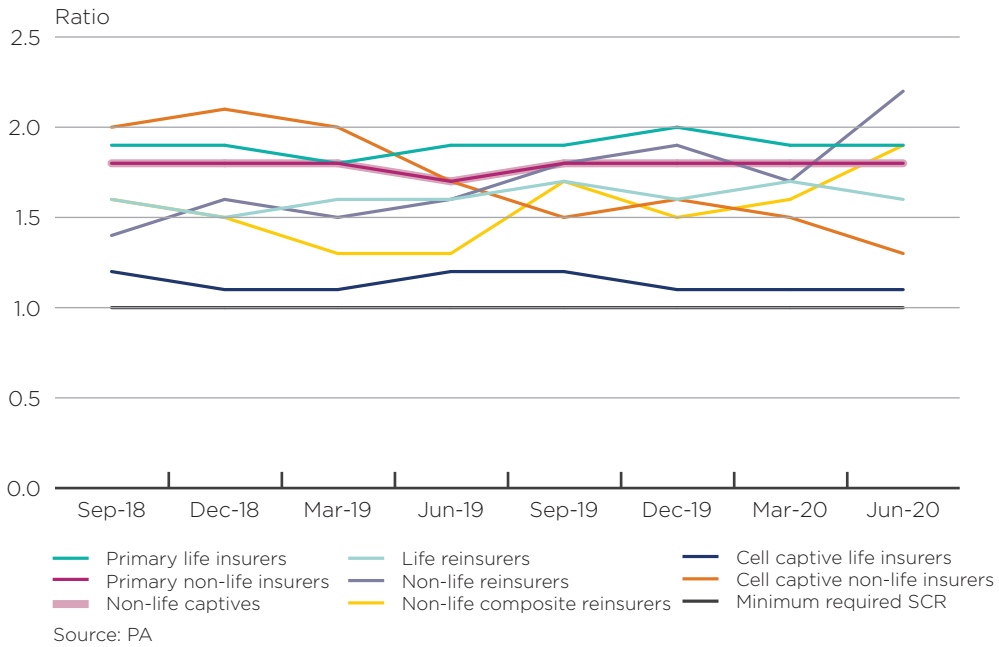
Figure 53: Underwriting profits of non-life insurers



Source: PA

Despite recent challenges, the insurance sector remains adequately capitalised. The solvency capital requirement (SCR) is the main regulatory requirement under the current framework, and reflects the amount of own funds that a company requires to survive a 1 in 200-year loss event. The median SCR level was above the regulatory minimum of 1 at the end of June 2020 for all types of insurers (see Figure 54).

Figure 54: Solvency capital ratios for the insurance sector



Source: PA

Notwithstanding a strong overall solvency position, increased claims for certain insurance products could pose risks to individual insurers. It is expected that some insurers will experience increased pressure on their solvency levels as a result of losses on lines of business that are sensitive to the current economic downturn. This includes non-life insurers with large exposures to credit insurance or business interruption policies (see Box 7 on business interruption insurance). Depending on COVID-19 developments, life insurers may also experience increased life and funeral claims.

Box 7: Business interruption insurance amid COVID-19

Due to the impact of the COVID-19 pandemic as well as the various phases of national lockdown, a significant number of business operations in South Africa were interrupted. Many business owners hold insurance policies which cover loss of income under various circumstances of business interruption (BI).

However, many insurers do not regard the national lockdown as an insured event and do not believe that it triggers a valid BI insurance claim. Given the opposing views between the insured and the insurers, this matter has received significant media attention and has negatively impacted public confidence in the short-term insurance industry.

What does BI insurance cover? There are three main types of BI insurance cover: direct standard BI (provides indemnity for damages or loss of revenue due to an adverse event causing physical material damage, for example fire at a facility); contingent business interruption (CBI) (provides cover for a loss of revenue due to the loss of raw materials, components or sub-assemblies from a key outside supplier or the loss of a major customer); and non-damage BI (NDBI) (covers business interruption by an incident unrelated to property damage, for example cyberattacks and order of civil authority). There is a general consensus that the direct standard BI would not be triggered as COVID-19 has not caused material physical damage to property. However, CBI and NDBI are the insurance offerings currently under dispute.

The Financial Sector Conduct Authority (FSCA) has provided guidance on how BI policies can be interpreted. On 18 June 2020, following a FSCA BI policy wording review, the FSCA issued Communication 34 of 2020.[1] In this communication, the FSCA noted that BI insurance policies with clauses relating to infectious diseases had various wordings. However, the FSCA suggested that six broad categories of policies can be distinguished based on the requirements for an insurable event. In each case, a different burden of proof exists for a BI claim to be valid, but in general, the national lockdown itself was not found to be a trigger for a valid BI claim. Instead, under most of the policy wording categories, businesses are required to prove that they were specifically affected by COVID-19 or that it affected a specific area in which their business operates.

Based on FSCA's communication, the PA conducted a survey of non-life insurers providing coverage in respect of BI. The survey covered 13 non-life insurers to determine their exposure to three common categories of BI insurance related to infectious diseases (as referred to in the previous paragraph). The results of the survey indicate that these non-life insurers had an aggregate maximum gross exposure (before reinsurance recoveries) of R71 billion and a maximum net exposure (after reinsurance support) of R55 billion.

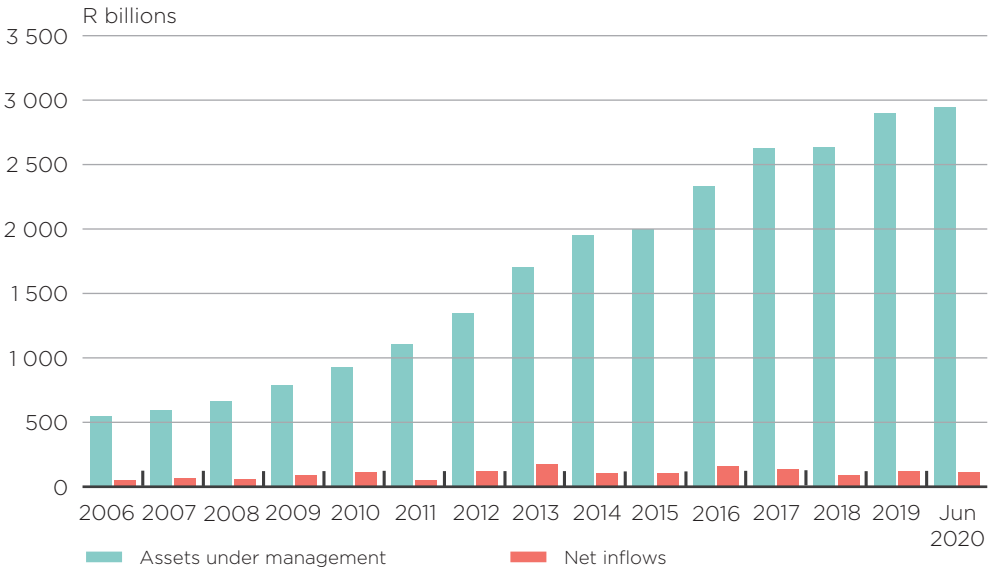
Various insurers have committed to the provision of interim relief as legal certainty on BI claims is awaited. While some insurers have agreed to pay out claims following the FSCA's guidance, others are choosing to await a legal judgement. Some of the insurers awaiting legal certainty have committed to providing their clients with interim relief (amounting in aggregate to approximately R1.5 billion). Should a court rule in favour of the policyholder, the interim relief payment will form part of the final settlement on the insurance contract. However, should a court rule in favour of the insurer, the interim relief payment would not be recovered from the policyholder. As BI clauses differ from contract to contract, legal judgement on one particular case may not necessarily be binding on others. Consequently, there could be significant delays in resolving this issue. The exposure of non-life insurers to BI insurance indicates that it could pose significant risks to their profitability in the short term, if the courts rule in favour of the insured in most (or all) cases.

1 See https://www.fsca.co.za/Regulatory%20Frameworks/Temp/FSCA%20Communication%2034%20of%202020%20(INS).pdf

Collective investment schemes

CISs attracted net inflows amounting to approximately R110 billion during the first half of 2020. Net inflows were recorded in both the first and second quarters of 2020, with the majority (R88 billion) being recorded in the second quarter. This is an encouraging development as the scale of the financial market shock experienced in March and April 2020 raised concerns that the CIS sector could experience significant outflows. Total assets under management (AUM) across the CIS industry increased slightly from R2.9 trillion at the end of 2019 to R2.94 trillion by the end of June 2020 (a gain of 1.6%).

Figure 55: Assets under management and net flows into CISs

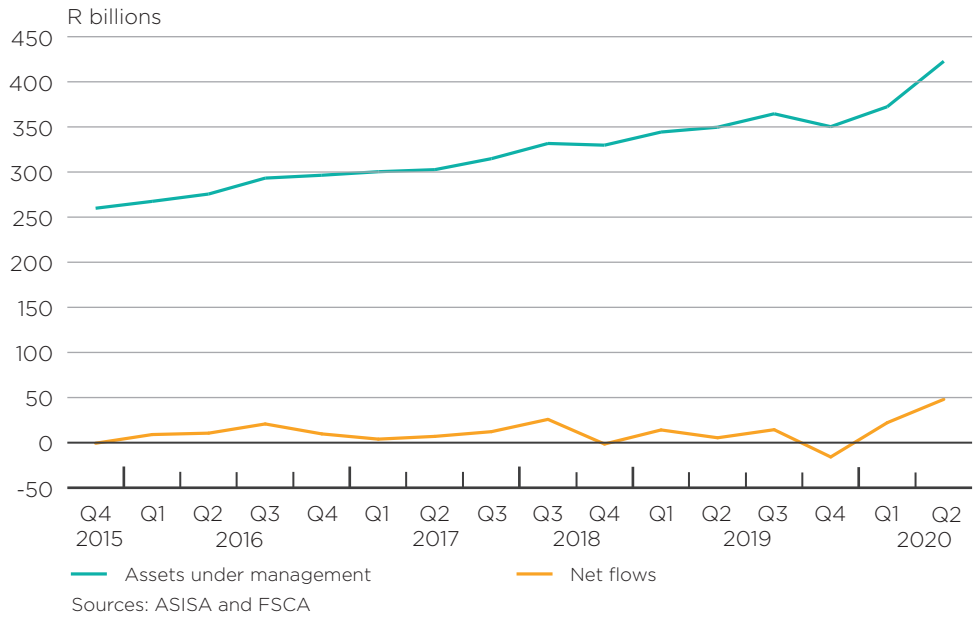


Annual figures based on data as at end December of each year, except for June 2020 figures which as at the end of June 2020

Sources: ASISA and FSCA

Local money market funds (MMFs) have experienced large net inflows in 2020. Some of the largest MMFs inflows in recent history were recorded in the first half of 2020, totalling R70 billion (see Figure 56). As a result, AUM among MMFs increased to a new high of R422 billion. It is likely that the strong inflows into MMFs were the result of investor demand for highly liquid and relatively stable assets.

Figure 56: Assets under management and net flows into MMFs

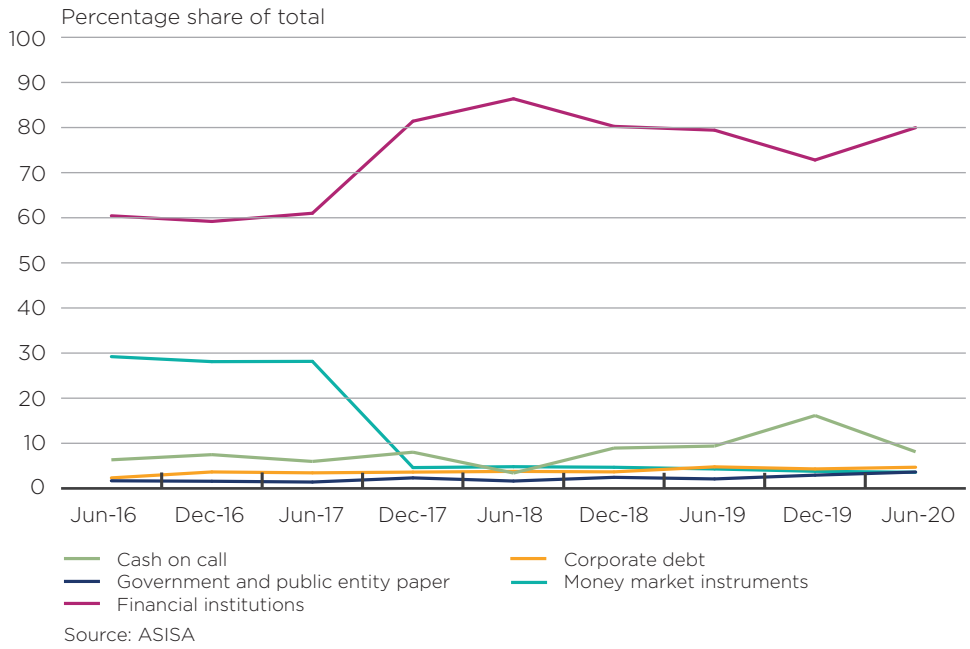


Sources: ASISA and FSCA

The resilience of MMFs to the COVID-19 shock helped to avoid a larger squeeze on bank funding. MMFs are an important part of the financial system due to the large size of their holdings and because they hold debt instruments of a short maturity. Large-scale redemptions from MMFs can force these funds to sell assets, which in turn may put pressure on the borrowers that issue the debt held by MMFs. This is particularly relevant for financial stability in South Africa because commercial bank issued debt instruments form the majority share of MMF holdings (see Figure 57). Thus, redemptions from MMFs can spillover onto liquidity risk in the banking sector. Encouragingly, while some funding pressures were present, sustained MMF redemptions did not occur in the first half of 2020. Furthermore, the FSCA has set diversification requirements for MMFs,[66] which has helped to reduce idiosyncratic risk in each fund.

66 The highest exposure any portfolio can have to a single listed banking group with a market capitalisation of R20 billion or more is 30% (the limit is lower for smaller banks).

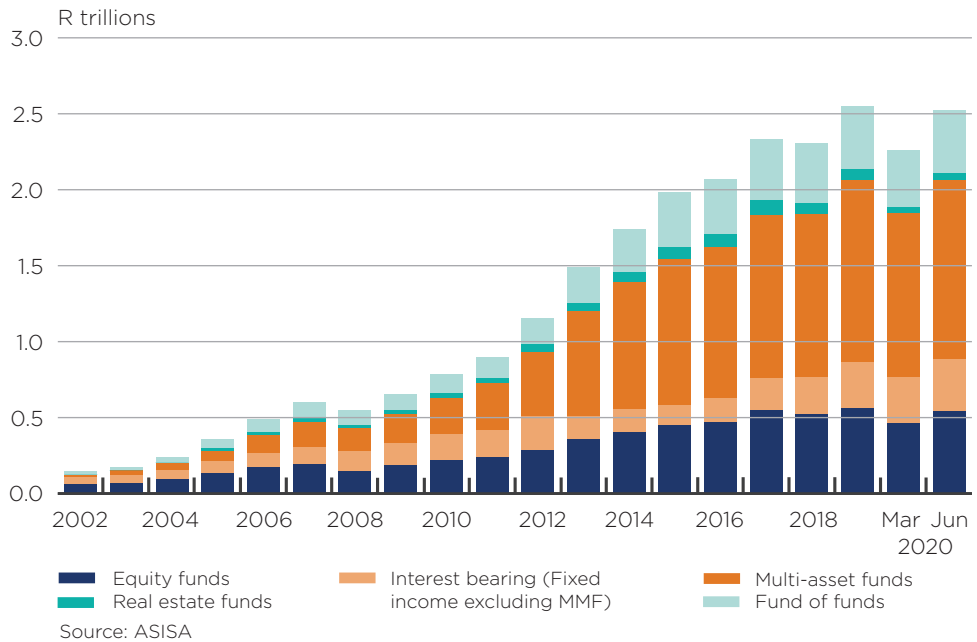
Figure 57: Local MMF exposures



Source: ASISA

Other investment funds experienced significant volatility in their AUM as a result of rapid changes in market conditions. Other investment funds (including equity, multi-asset, fixed income, real estate and fund of funds) experienced a R290 billion (or 11%) fall in their AUM in the first quarter of 2020 as deteriorating market conditions resulted in a significant decline in the market valuation of these portfolios. However, the value of AUM recovered in the second quarter of 2020, in line with improving market conditions (see Figure 58).

Figure 58: Other investment funds assets under management



Source: ASISA

Financial market infrastructures

Box 8: What are FMIs and what role do they play in the financial system?

Financial market infrastructures (FMIs) are being given a standalone section for the first time in this edition of the *FSR* as part of the SARB's growing coverage of the financial sector. This box provides an introduction to FMIs and explains why they are an important part of South Africa's financial system. It also examines the FMI regulatory landscape and the potential for FMIs to pose systemic risk.

FMIs facilitate the payment, clearing and settlement[1] of a broad range of financial transactions, from individual retail electronic fund transfers to the settlement of securities traded by financial firms. FMIs are different from, but deeply interlinked with, the more well-known banking, insurance, pension and asset management sectors. Some experts metaphorically refer to FMIs as forming the plumbing of the financial system. This is because retail customers generally do not interact directly with FMIs, instead they facilitate and support transactions between financial firms. FMIs are formally defined as "a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling or recording payments, securities, derivatives or other financial transactions".[2]

While safe and efficient FMIs contribute to economic growth, they can also introduce risks into the financial system. The risks posed by FMIs largely relate to the fact that if they fail to function, payments and securities transactions could be brought to a halt. This, in turn, would have serious implications for the financial system and the broader economy. To address these risks, International standard-setters, the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commission (IOSCO)[3] published the *Principles for Financial Market Infrastructures* (PFMIs) in 2012. These are regarded as the international standards for the management, regulation and supervision of FMIs. The PFMIs set out 24 principles divided into themes that aim to manage risks associated with FMIs, including operational, default management, settlement, credit and market risks as well as legal, access, efficiency and transparency matters.

In South Africa, payment and non-payment FMIs are regulated in terms of different legislative frameworks. Payment FMIs facilitate the transfer of funds between participants within a payment system. Various payment systems exist in South Africa, among which the authorities have designated the following as systemically important payments systems (SIPSs): the retail payment system owned and operated by BankservAfrica (Pty) Limited, the large value payment system (LVPS) known as the South African Multiple Option Settlement System (SAMOS), the LVPS known as the Southern African Development Community – Real-time Gross Settlement System (SADC-RTGS) and the LVPS – which clears the delivery and payment legs of equities, bonds and money market transactions – owned and operated by Strate (Pty) Limited.[4] Current regulation makes provision for five types of non-payment FMIs, including: exchanges, clearing houses,[5] central

1 Clearing refers to the process of transmitting, reconciling and confirming transfer orders prior to settlement. This may include the netting of orders and the calculation of final positions for settlement. Settlement refers to the completion of a transaction through the transfer of funds and/or securities.

2 Principles for Financial Market Infrastructures, Committee on Payment and Market Infrastructures, Bank for International Settlement, April 2012, p7 (hereafter PFMI document).

3 The CPMI stands for the Committee on Payment and Market Infrastructures (formerly the Committee on Payments Settlement Systems) and the IOSCO stands for International Organization of Securities Commissions.

4 The LVPS Continuous Linked System (CLS), operational in South Africa, is also recognised as a SIP but its supervision is based abroad.

5 A clearing house maintains and provides the infrastructure to clear transactions in securities.

counterparties (CCPs),[6] central securities depositories (CSDs)[7] and trade repositories (TR).[8] There are five exchanges licensed to operate in the domestic market. The JSE and A2X are examples of exchanges that facilitate the clearing of equities listed on the exchange. JSE Clear has been approved by the authorities to act as a CCP and provides this function for JSE-listed derivatives. There are two licensed CSDs in the domestic market, namely Granite and Strate. Besides its CSD functions in relation to uncertificated securities, Strate is also a licensed associated clearing house for bonds and provides the securities settlement system for bonds, money markets and equities. Domestic financial institutions generally make use of CCPs and TRs licensed abroad for their cross-border OTC derivative transactions.

The domestic regulation and supervision of FMIs is shared between three agencies. The National Payment System Department (NPSD) of the SARB is responsible for SIPS, and the PA and FSCA are responsible for non-payment FMIs.[9] Meanwhile, the Financial Stability Department of the SARB monitors the FMI landscape for the build-up of systemic risks. There are statutory concurrence requirements aimed at creating a coordinated and collaborative approach between the relevant regulatory agencies and the SARB in respect of the regulation, supervision and oversight of FMIs. This inter-agency coordination and collaboration is detailed in publicly available memoranda of understanding.[10] PFMI assessments of domestic FMIs are, to some extent, also conducted on a joint basis. The financial stability and prudential supervision of FMIs is still in its early stages in South Africa, but the authorities are making steady progress in building the necessary capacity to monitor the risks posed by FMIs.

6 A central counterparty interposes itself between counterparties to contracts traded in financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the performance of open contracts

7 A central securities depository provides securities accounts, central safekeeping services, and asset services, which may include the administration of corporate actions and redemptions, and plays an important role in helping to ensure the integrity of securities issues (i.e. ensure that securities are not accidentally or fraudulently created or destroyed or their details changed).

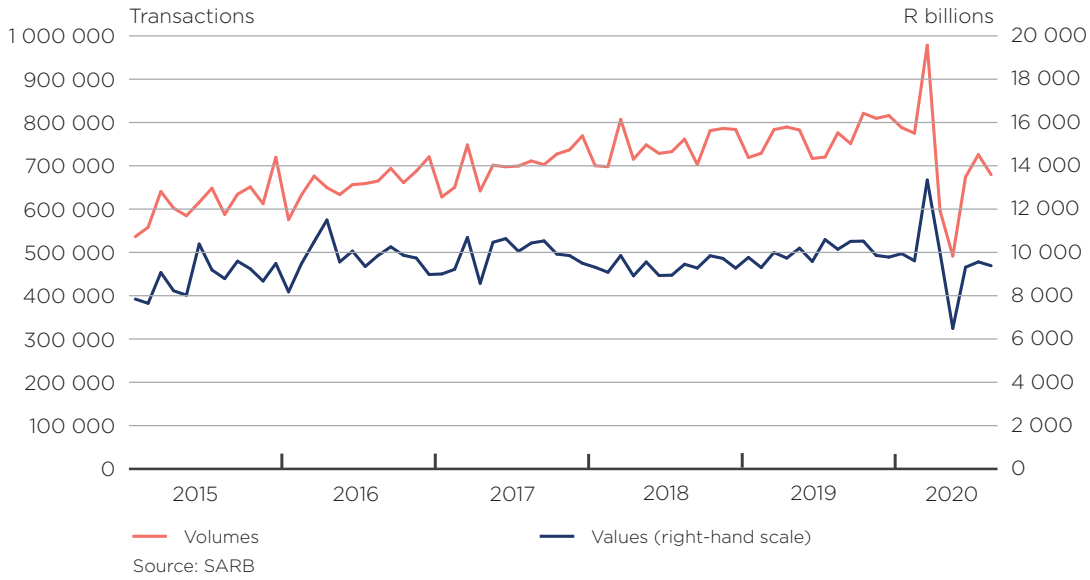
9 The FSCA also plays a role in the market conduct supervision of payment FMIs.

10 These memoranda of understanding are available on the PA and FSCA websites.

Domestic payments transactions have exhibited considerable volatility in recent months. SAMOS[67] recorded its lowest value and volume of transactions in at least five years during May 2020. This followed a large spike in transactions during March 2020, perhaps reflecting a heightened demand for cash and consumer goods ahead of the national lockdown that was imposed towards the end of March (see Figure 59).

67 SAMOS is an automated interbank settlement system operated by the SARB, for banks to settle their interbank obligations on either a real-time gross basis or under a delayed gross settlement arrangement. SAMOS settlements include real-time line (RTL), continuous processing line (CPL) and CLS systems. The RTL facilitates the gross settlement of individual large value transactions in real time on a credit-push basis, as well as the delayed settlement of retail payments and securities. The CPL facility provides an alternative settlement option to the RTL option. It allows for the delayed, but continuous processing of settlement instructions. CLS payments are international payments initiated by domestic banks using the CLS system. The CLS Bank virtually eliminates the credit risk associated with settling foreign exchange transactions by providing a payment-versus-payment arrangement.

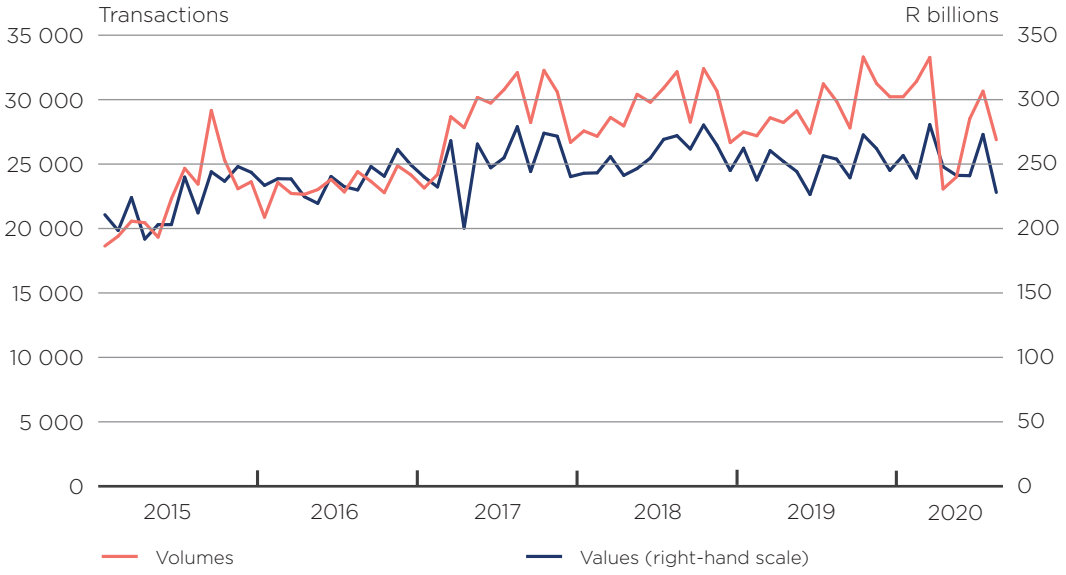
Figure 59: Settlement values and volumes in SAMOS



Source: SARB

Volumes in the SADC-RTGS system were also lower during lockdown, but values processed have increased slightly in 2020. Regionally, the SADC-RTGS settled over R2 trillion worth of transactions in the first eight months of 2020. This is a marginal increase over the same time in 2019. Transaction volumes dropped off sharply in April and May of 2020, but have recovered in recent months. The system has processed an average of 28 500 transactions per month in 2020, down slightly on the 29 300 monthly average for 2019. These figures are sourced from 83 participating banks (including central banks) across 15 SADC member states.

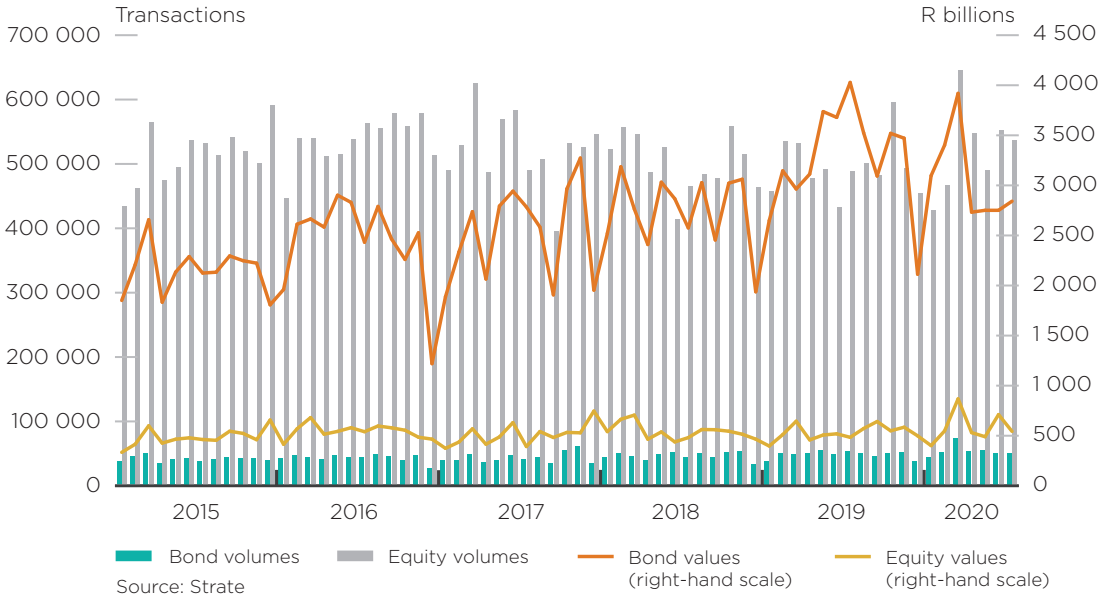
Figure 60: SADC-RTGS monthly values and volumes



Source: SARB

Between 2015 and early 2020, equity and bond settlements through Strate remained fairly stable in volume terms, perhaps reflecting the relatively stagnant economy over the past few years. Monthly values for both instrument types, depicted in Figure 61 below, showed heightened volatility around the start of the national lockdown.

Figure 61: Monthly equity and bond settlements



Source: Strate

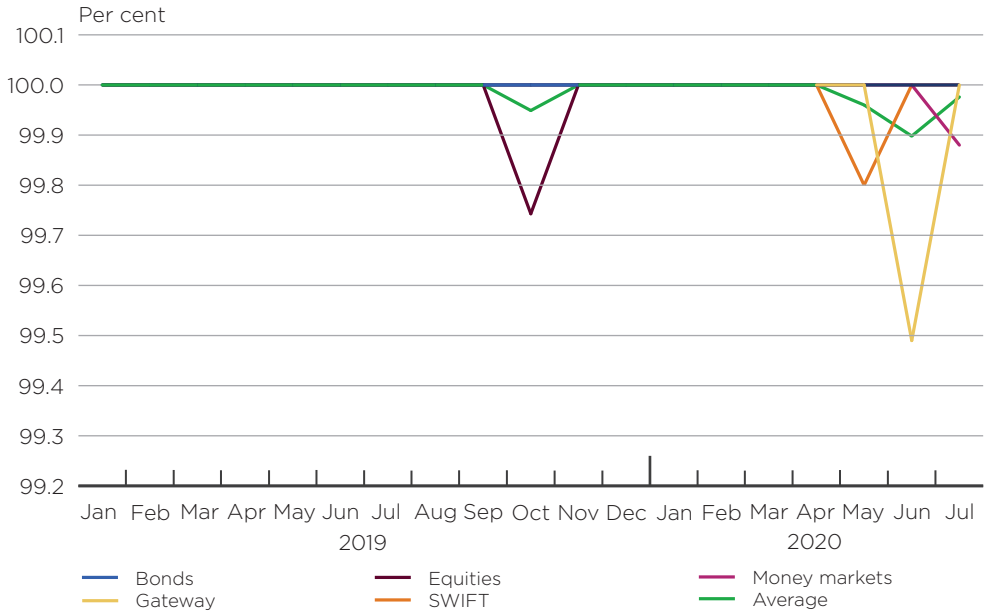
For financial system stability, it is critical that FMIs effectively manage operational risk. Possible operational failures among FMIs include errors or delays in processing transactions, system outages, insufficient capacity, fraud and data loss and leakage. Operational risk can stem from both internal and external sources. COVID-19 has accentuated a number of operational risks for FMIs, including cyber and technology risks, as well as risks relating to the health and safety of key operational staff.

South Africa's FMIs have maintained operational resilience through COVID-19. The SADC-RTGS and SAMOS[68] systems operated at 100% core system availability between January and December 2019, and at an average of 99.88% system availability in the nine months to September 2020. The deterioration in system availability in 2020 was the result of a network outage in July 2020. Despite this event, SAMOS and SADC-RTGS continued to function effectively throughout the COVID-19 period. In the case of Strate, system operational availability remained in line with pre-lockdown levels and included only minor technical glitches, which did not meaningfully hamper operations (Strate's tolerance level for system availability is 99.5%). Overall,

68 The SAMOS system is operational on a 24/7 basis, and a fully dedicated SAMOS Customer Support Centre (CSC) team is available to monitor the system during business hours. This team ensures that: all SAMOS processors are up and running; message flows from or to SAMOS are monitored; problems reported by any of the participants are attended to; and all necessary reports are sent out to the CLS Bank timeously.

there has not been a material adverse impact on operational availability of FMIs during the pandemic. Nevertheless, there is a need for FMIs to maintain vigilance, particularly as they could be vulnerable to operational disruption through failure of other critical service providers, such as telecommunication networks or power supply operators.

Figure 62: System availability at Strate



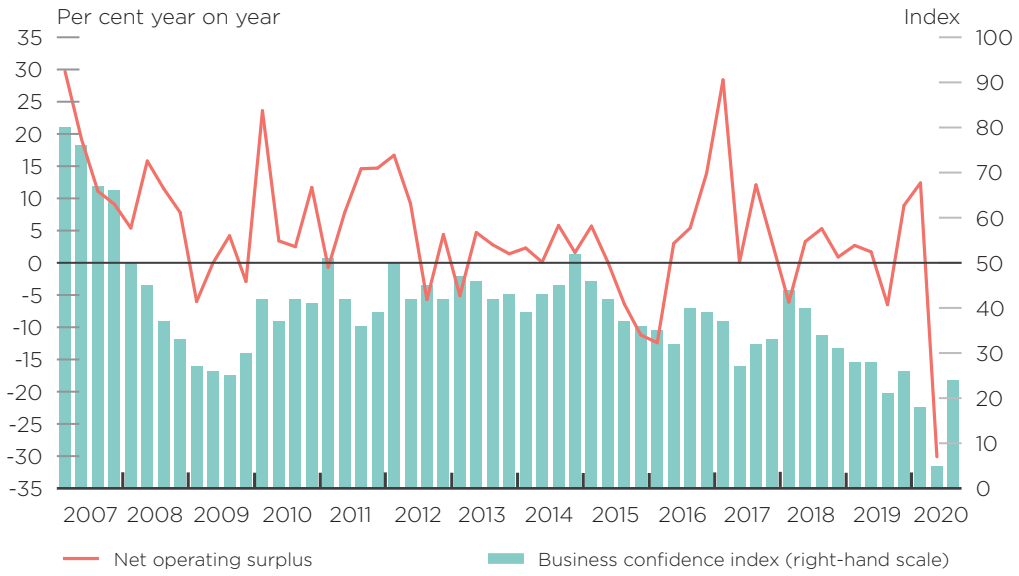
Gateway and SWIFT are the main communication systems to the settlement systems operated by Strate.

Source: Strate

Non-financial corporates

Recent weaknesses in non-financial corporate sector earnings have been exacerbated by the COVID-19 related containment measures. The sector's nominal net operating surplus (a proxy for corporate earnings) fell by 30.1% y/y in the second quarter of 2020 (see Figure 63). This is significantly worse than what was observed during the global financial crisis period. While the sector's performance highlights the significant impact of the COVID-19 lockdown, pre-existing weakness in the domestic economy and in corporate balance sheets have accentuated the effects of the pandemic. The relaxation of lockdown measures should allow firms to recoup a portion of their lost revenue. However, ongoing production constraints (capacity restrictions, health and safety protocols, etc.), possible changes in consumer behaviour and muted confidence may continue to hinder the sector's earnings potential in the near term.

Figure 63: Corporate earnings and business confidence



Net operating surplus is the gross operating surplus minus depreciation. It is used as a proxy for corporate earnings.

Sources: Stats SA, FNB/BER, and SARB

High levels of debt amid a weak earnings outlook have raised concerns about the sector's debt-service capacity. In the first quarter of 2020, domestic non-financial corporate debt stood at 52.4% of GDP.[69] The stock of debt has drifted upwards over the past decade, from a low of 29% of GDP in 2011 and is above the levels recorded just prior to the global financial crisis, a period of relative exuberance in the credit market. In the second quarter of 2020, the sector's debt-to-GDP ratio increased sharply to 63.2%, largely as a result of the steep fall in GDP (see Figure 64). Non-financial corporate debt has historically trended below that of its emerging-market peers,[70] but the recent shock to earnings raises concerns about corporates' ability to repay debt. These concerns are further underscored by the significant increase in the net debt-to-earnings before interest and taxes (EBIT) ratio,[71] which has more than doubled from its 2017 lows to reach a level of 11.1 times in the first quarter of 2020. As a general rule, firms with a net debt-to-EBIT ratio higher than 4 are considered highly leveraged.[72]

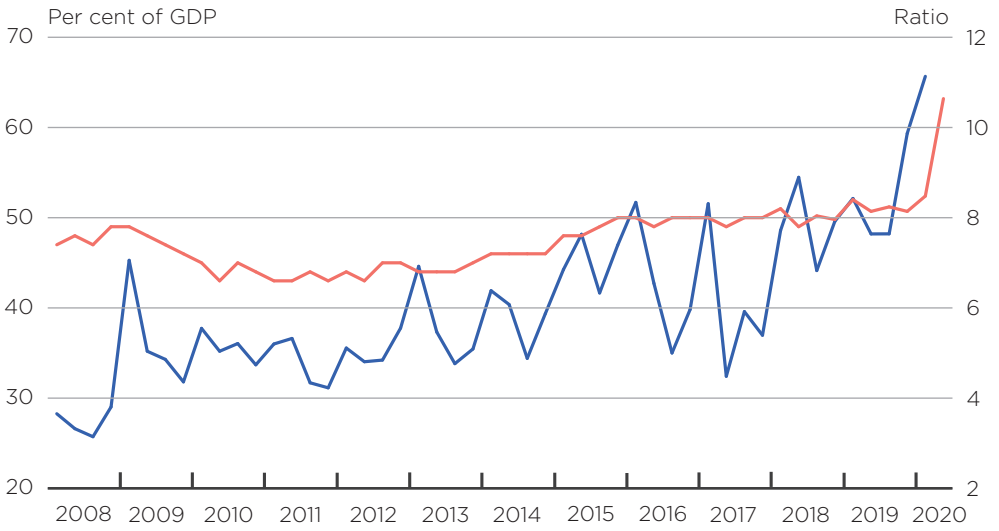
69 This figure includes bank provided credit as well as debt securities outstanding.

70 See: SARB *Financial Stability Review*, First Edition 2020.

71 EBIT is earnings before interest and taxes. Net debt is calculated as total debt minus local and foreign currency deposits. Deposits are used a proxy for cash and cash equivalents in the calculation.

72 See IMF Global Financial Stability Review, April 2018.

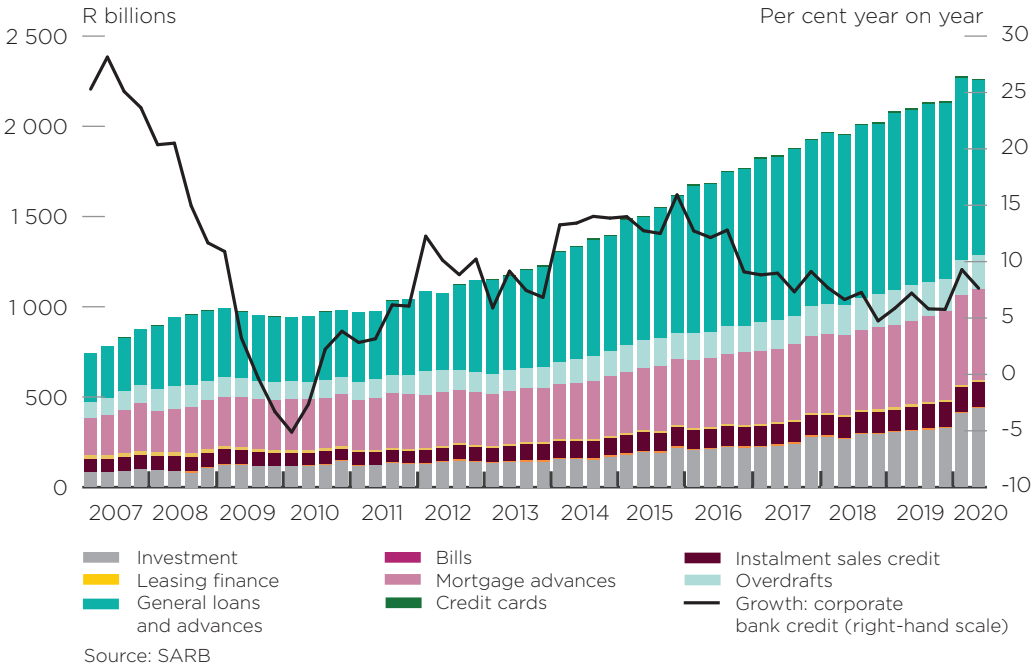
Figure 64: Non-financial corporate sector debt levels



Sources: BIS, IIF and SARB

Credit extension from the banking sector has been relatively strong in 2020. In the first quarter of 2020, bank credit extension to the non-financial corporate sector grew by 9.3% y/y, the fastest rate since the third quarter of 2016 (see Figure 65). However, it slowed in the second quarter of the year, growing by 7.6% as the impact of the COVID-19 pandemic weighed on economic activity. It is likely that bank credit extended to corporates in 2020 was supported by the fact that debt issuance in the domestic capital market was more challenging (as discussed below).

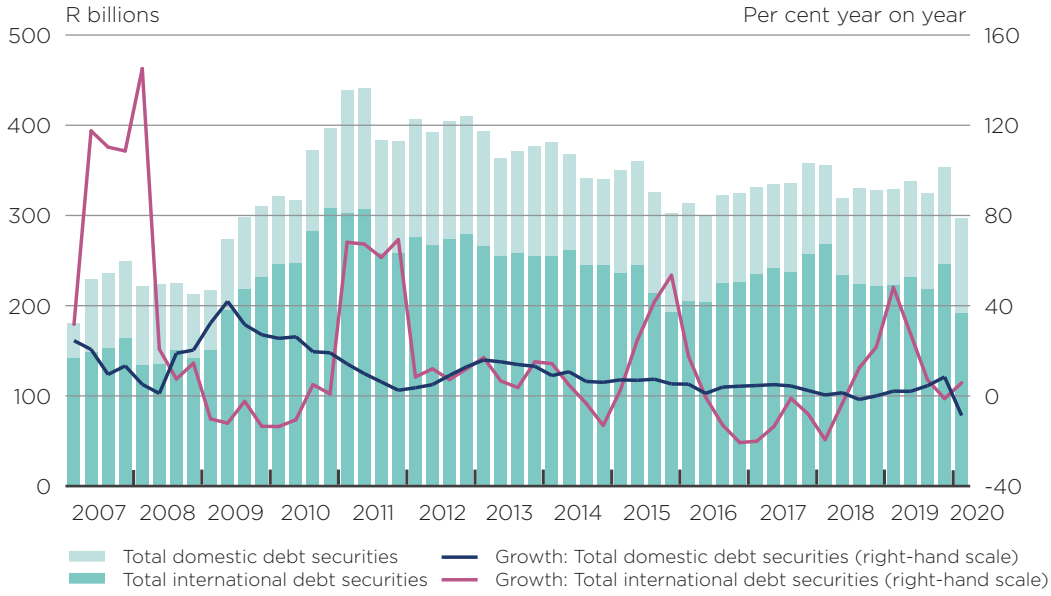
Figure 65: Bank credit extension to non-financial corporates



Source: SARB

Non-financial corporate borrowing in debt capital markets fell in the first quarter of 2020, reflecting adverse market conditions. Growth in non-financial corporate debt securities outstanding declined from 5.3% y/y in the fourth quarter of 2019 to -4.1% in the first quarter of 2020 (see Figure 66). This contraction was driven largely by a decline in the issuance of domestic debt securities, reflective of the pressures that were observed in the domestic corporate bond market. Meanwhile, growth in the issuance of international debt securities trended upwards for the first time since early 2019. While the ability to tap into international debt markets helped firms to fill the funding gap that materialised in the first quarter, it also increased their exposure to foreign-currency denominated debt (and the associated currency risk).

Figure 66: Debt securities issuance by non-financial corporates



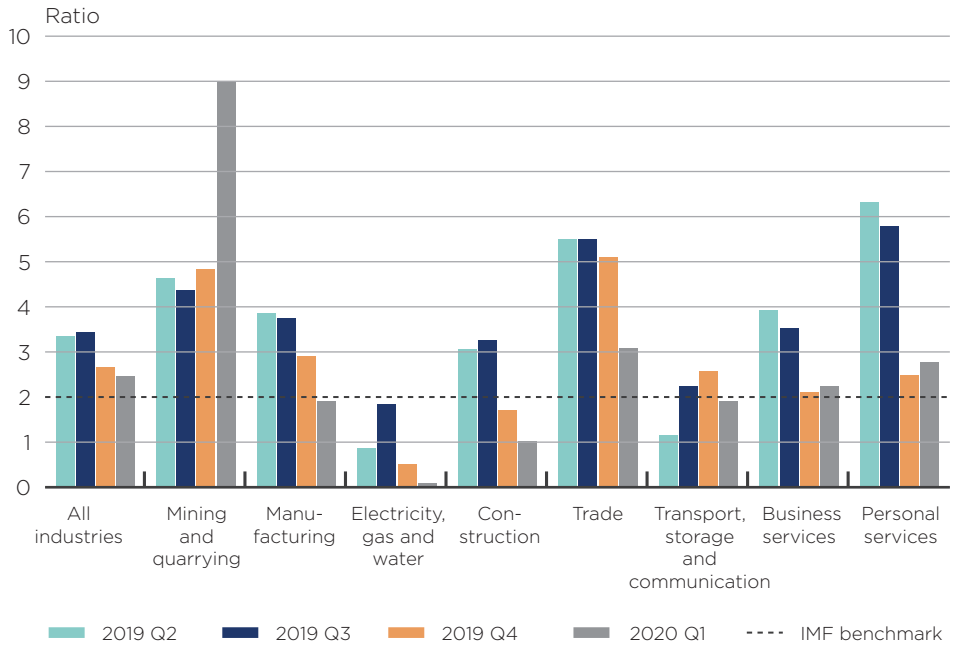
Sources: BIS and SARB

Non-financial corporates are facing a declining interest coverage ratio (ICR).[73] The sector's ICR fell for the second consecutive quarter to 2.5 in the first quarter of 2020 (from 2.7 in the last quarter of 2019). While this average level remains above the benchmark of 2, significant heterogeneity is present at the industry level (see Figure 67). The ICR deterioration recorded in the first quarter was more severe in the industries most sensitive to COVID-19 induced lockdown measures such as manufacturing, construction, trade and transport.

73 The interest coverage ratio estimates a firm's ability to generate enough cash flow to finance its interest expenses on outstanding debt by dividing a firm's earnings before interest and taxes (EBIT) by its annual interest expenses. A conservative IMF benchmark identifies firms with income that cover interest expenses by less than two times as 'weak'. According to the IMF, an ICR below 1 is defined as a 'technical default'. In such a situation, many of these firms can survive for some time by selling assets to meet their debt obligations, but if their ICRs remain below 1 for a sustained period of time, they could eventually run out of assets and default on their debt obligations.

A simple stress test of the non-financial corporate sector highlights its vulnerability to the COVID-19 shock. A simple stress test was applied to the first quarter 2020 ICR data by estimating the impact of a 6% increase in borrowing costs and a 30% decrease in sector wide earnings.[74] Under this stressed scenario, the sector-wide ICR declines to 1 (see Figure 68). With the exception of the mining and quarrying industry, all other industries' ICRs fall below the benchmark level of 2. The stressed ICR indicates that most industries will face serious challenges as a result of a temporary funding and earnings stress. It is important to note that this stress may not be comparable to the COVID-19 shock for various reasons. However, it is intended to test the resilience of the sector to a typical stress event. The aggressive monetary policy easing (which is likely to have reduced many firms' funding costs) as well as the large scale loan restructuring undertaken by the banking sector has removed a significant amount of short-term pressure on the corporate sector. Nevertheless, it is clear that the sector has entered the current downturn in a relatively vulnerable position.

Figure 67: Non-financial corporate sector interest coverage ratio

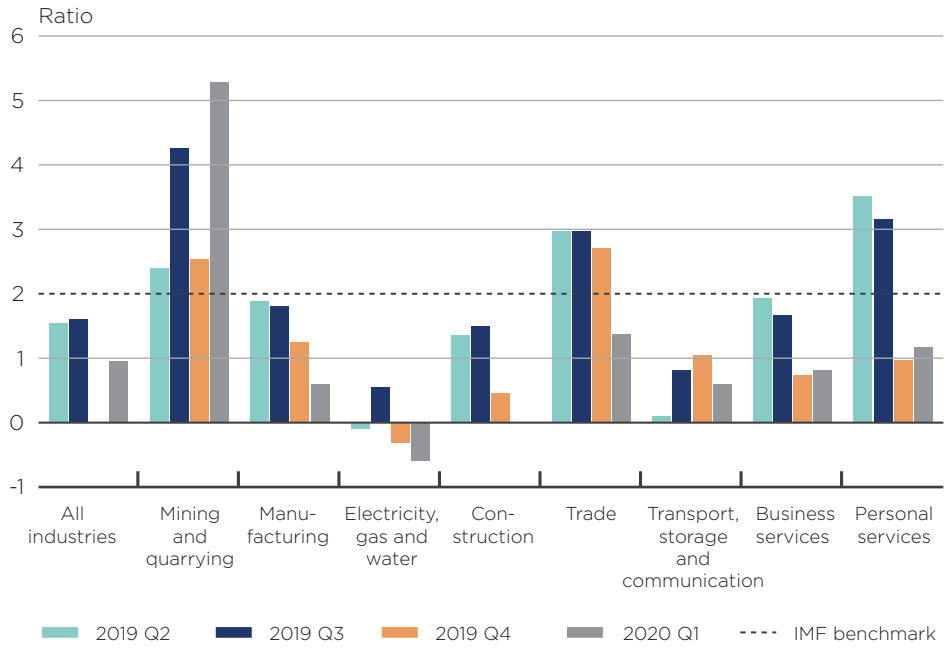


The interest coverage ratio excludes public administration, defence activities and education.

Sources: Stats SA, IMF and SARB

74 These shocks include a combination of a 6% increase in borrowing costs and a 30% decline in earnings. This is consistent with what was experienced by domestic non-financial firms in 2009.

Figure 68: Stressed non-financial corporate sector interest coverage ratio



The interest coverage ratio excludes public administration, defence activities and education.

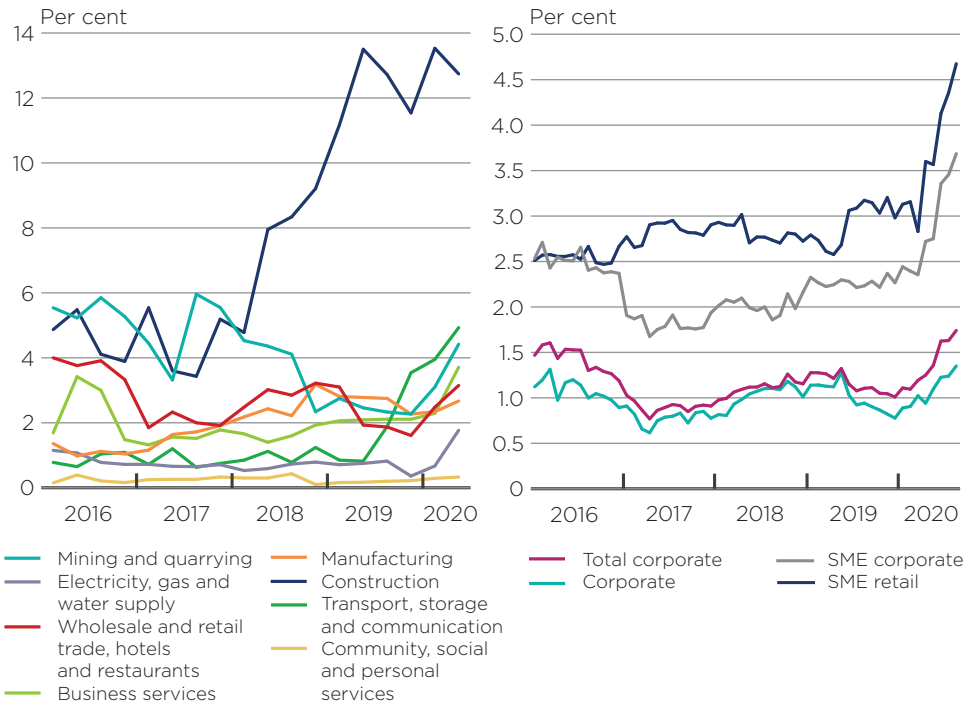
Sources: StatsSA, IMF and SARB

Corporate sector NPLs have increased on a broad basis. The corporate sector's NPL ratio[75] has increased from 1% in December 2020 to 1.7% in August 2020. While defaults for larger corporates have increased in recent months, the pick-up in the NPL ratio has been driven to a large extent by small- and medium-sized enterprises (SMEs). However, it is important to note that SMEs account for a smaller share of the banking sector's total loan portfolio. Nearly all industries have experienced an increase in NPLs in recent months. However, the construction industry is clearly under the most strain at present[76] (which was the case even before COVID-19). Defaults may continue to increase during the second half of the year as payment holidays and loan restructure programmes cease.

75 The ratio of the value of corporate NPLs to total outstanding corporate loans.

76 Construction accounts for less than 1% of total bank credit exposures.

Figure 69: NPL ratios on an industry and sectoral basis



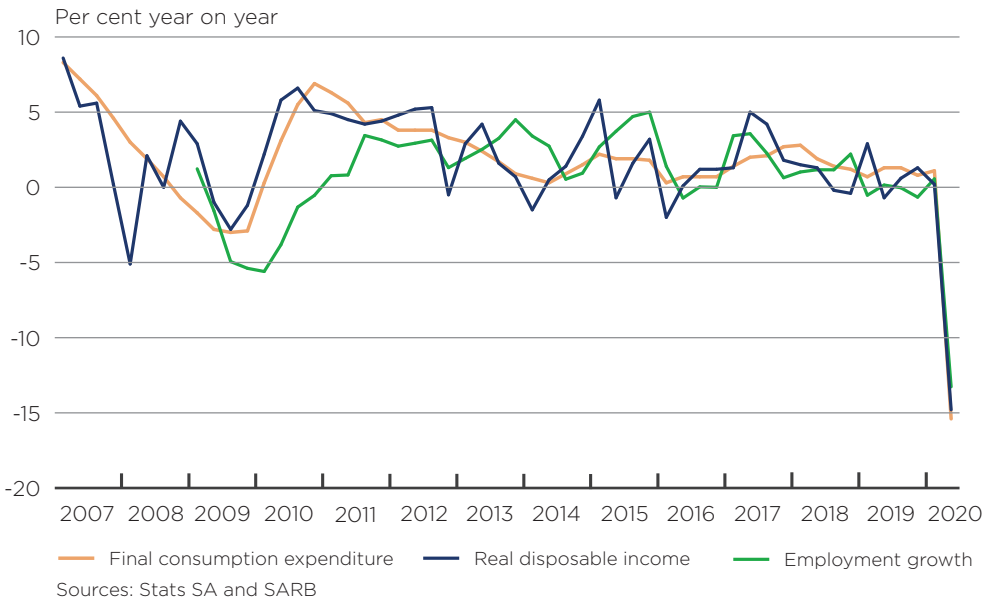
Source: PA

Households

Household finances faced severe strain in the second quarter of 2020. Consumption expenditure by households fell by slightly more than 15% y/y in the second quarter, the largest decline since at least 1960. A key driver of this outcome was the nearly 15% drop in real disposable income as well as a 13% fall in employment[77] over the same time frame (see Figure 70). Job losses amounted to 2.2 million over the year to the second quarter of 2020, which is roughly double the peak to trough employment loss suffered during the global financial crisis period. As a result, the level of employment in the second quarter of 2020 was down to its lowest point since 2011 (14.2 million). It is likely that income and employment losses were at their worst in the second quarter. However, the scars of COVID-19 are expected to persist for years to come.

77 This is based on the *Quarterly Labour Force Survey* from Statistics South Africa.

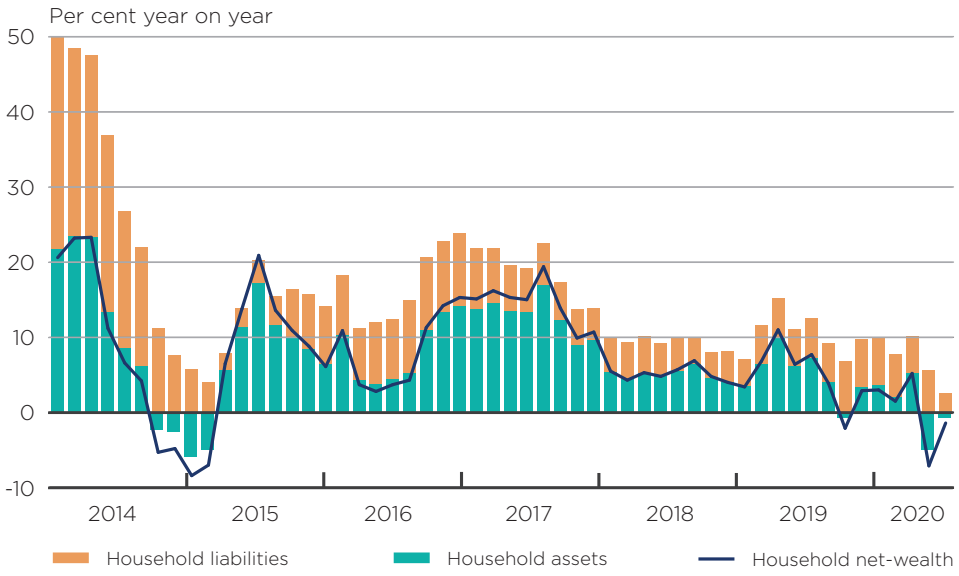
Figure 70: Real consumption, employment and income growth rates



Sources: Stats SA and SARB

Household net-wealth contracted in the first half of 2020. The value of household assets fell by 2.8% y/y, while household liabilities increased by 4.2% y/y in the first half of 2020. However, the value of household financial assets did stage a significant recovery in the second quarter as valuations of financial assets improved alongside the rebound in the domestic stock market to levels close to those seen at the end of 2019.

Figure 71: Growth rate of household net-wealth, liabilities and assets

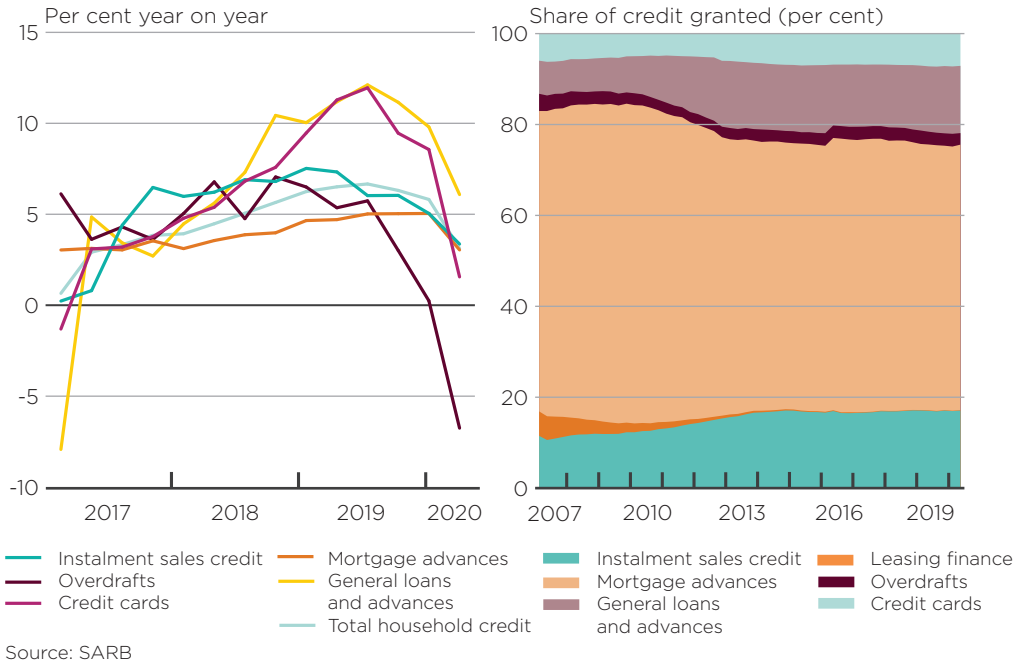


Net-wealth is the difference between household assets and liabilities

Source: SARB

Household credit growth has slowed in recent months, but remains positive. In the second quarter of 2020, growth in bank credit extended to households moderated to 3.1% y/y from 5.8% in the first quarter of 2020. Since the start of the year credit growth has slowed across all major categories with particularly sharp declines in the growth of credit card and overdraft lending (see Figure 72). The decline in credit growth would likely have been much larger were it not for the sizable relief measures provided to households by commercial banks (including the restructuring of credit agreements through the postponement of payment obligations).

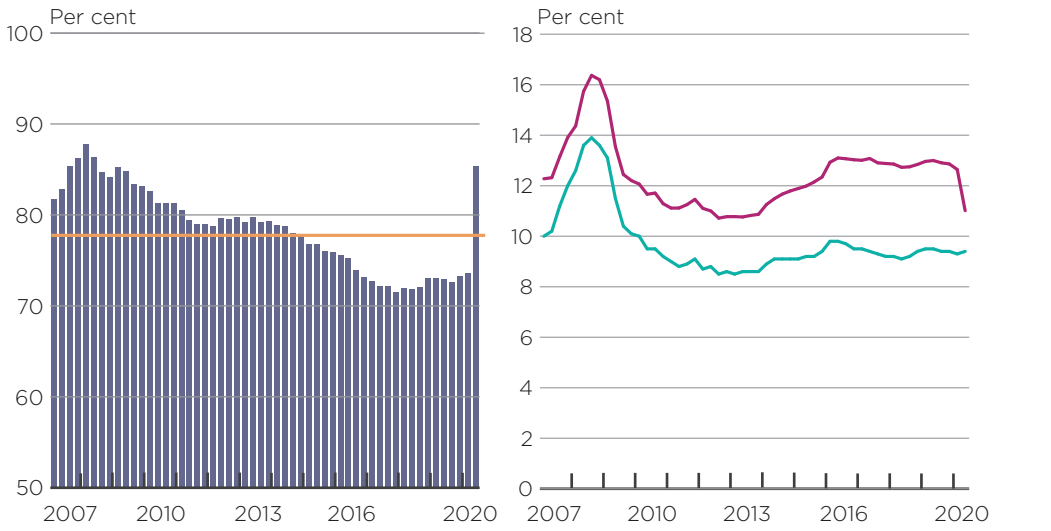
Figure 72: Bank credit extended and share of credit by credit type



Source: SARB

Lower interest rates have supported household debt service capacity. The household debt-to-disposable income ratio jumped to its highest level in more than a decade (85.3%) in the second quarter of 2020, reflecting a sharp drop in income alongside modest growth in the stock of debt (see Figure 73). However, debt-service costs as a share of household disposable income remained broadly stable in the second quarter of 2020, at 9.4%. This is because the average interest rate on household debt fell sharply in line with the SARB's repo rate cuts. Thus, the average debt service capacity of households did not materially deteriorate in the second quarter of 2020 despite the sharp economic downturn. It is important to remember that this average data can belie the strain faced by some households, where job or income losses have been acute.

Figure 73: Household debt-to-disposable income and debt-service costs

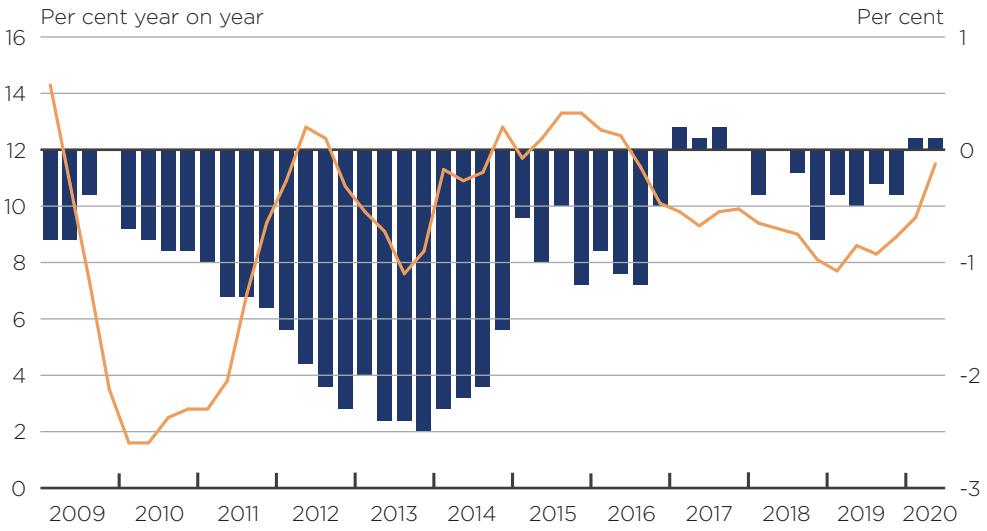


The average interest rate on current household debt is calculated by dividing the financing cost of household debt by total household debt.

Source: SARB

Household deposit holdings have increased strongly since the start of the national lockdown in March 2020. The quarterly level of household savings turned positive in the first and second quarters of 2020, as household spending fell by a larger margin than disposable income. This coincided with relatively rapid growth in household deposits with the banking sector (see Figure 74). Households appear to have taken a relatively cautious approach to managing their finances in the face of the unexpected COVID-19 shock. Increased deposit holdings may reflect the expectation by households that a transitory income windfall (due to unemployment benefits or cash flow relief related to debt repayment holidays) will subside in the near term. Increased savings could also reflect the impossibility of various kinds of spending under the national lockdown.

Figure 74: Household cash deposits and net savings

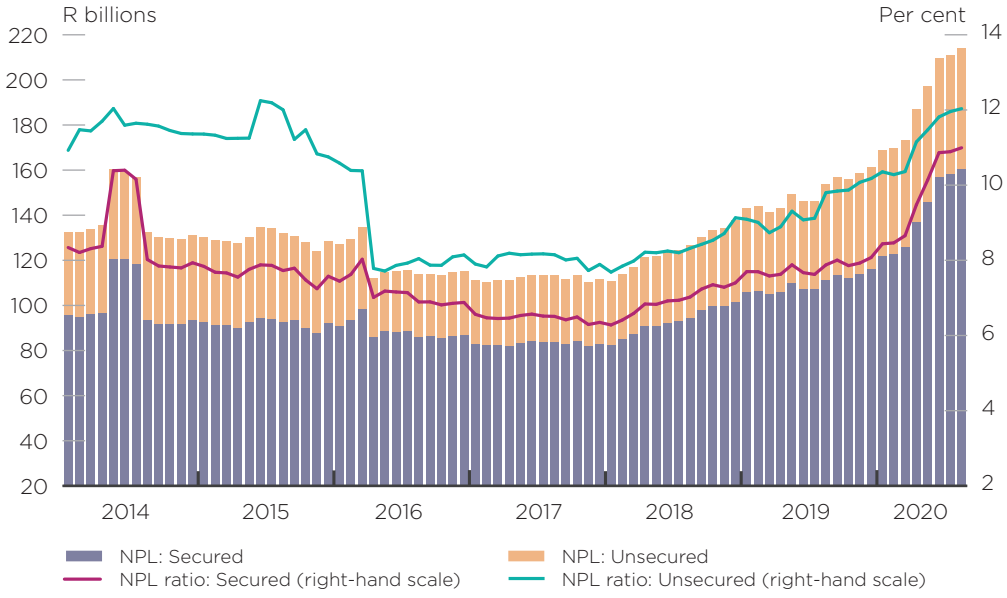


Note: household savings and disposable income are seasonally adjusted and annualised

Source: SARB

The rate of NPL growth in the household sector has accelerated in 2020. For the first eight months of 2020, NPL growth averaged 31% y/y, and was broadly similar across both the secured and unsecured portfolios. The NPL ratio has trended upwards since early 2018 in line with muted household income growth. However, the pace of increase has been greater since the start of 2020 (see Figure 75).

Figure 75: Banks' retail NPLs*



* This figure excludes the COVID-19 related credit restructures as they are not regarded as NPLs.

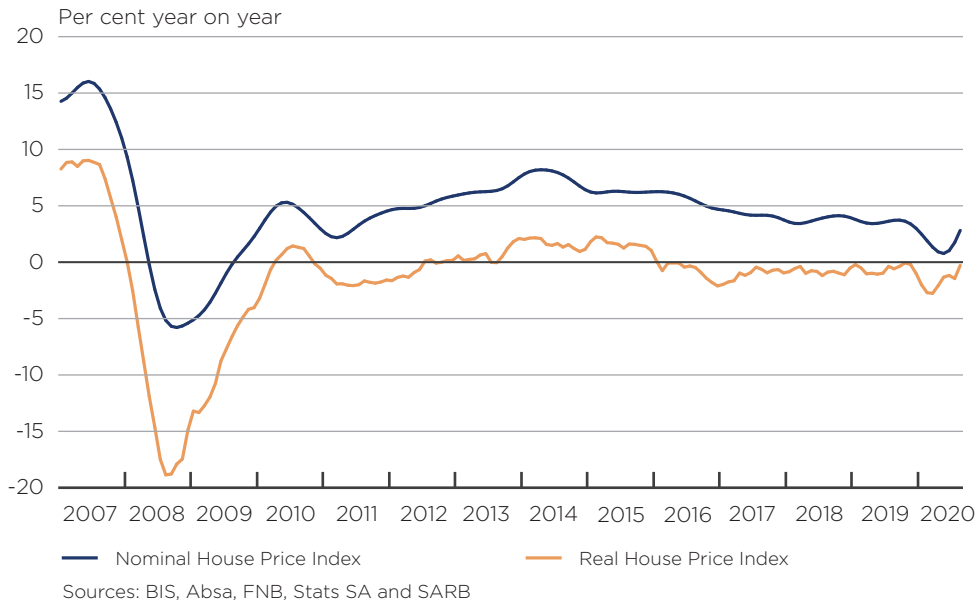
Source: SARB

Residential real estate

Residential real estate market trends are important indicators of financial system health, credit availability and confidence in the economy. These are vital to monitor for a number of reasons. First, as residential real estate forms a large share of household assets, changing market conditions can amplify economic trends through their effects on household wealth and collateral values. Second, as residential mortgage advances account for approximately a quarter of total private sector credit extension (and more than half of credit extended to households), trends in the real estate market have important implications for banks and other mortgage finance institutions. Analysis of these trends is an integral part of the SARB's financial stability monitoring process.

House price growth has slowed since the start of 2020. Nominal growth in residential property prices slowed to an 11-year low of 0.6% y/y in May 2020, before recovering slightly to 2.8% y/y in August 2020. This is down from an average growth rate of 3.5% in 2019 (see Figure 76). Real residential property prices[78] have been on a gradual and consistent decline for more than four years. It is clear that the property market was in the midst of a downward cycle prior to the emergence of COVID-19. This is in stark contrast to the 2008 recession, prior to which property prices were increasing at double digit levels in nominal terms.

Figure 76: Residential property prices

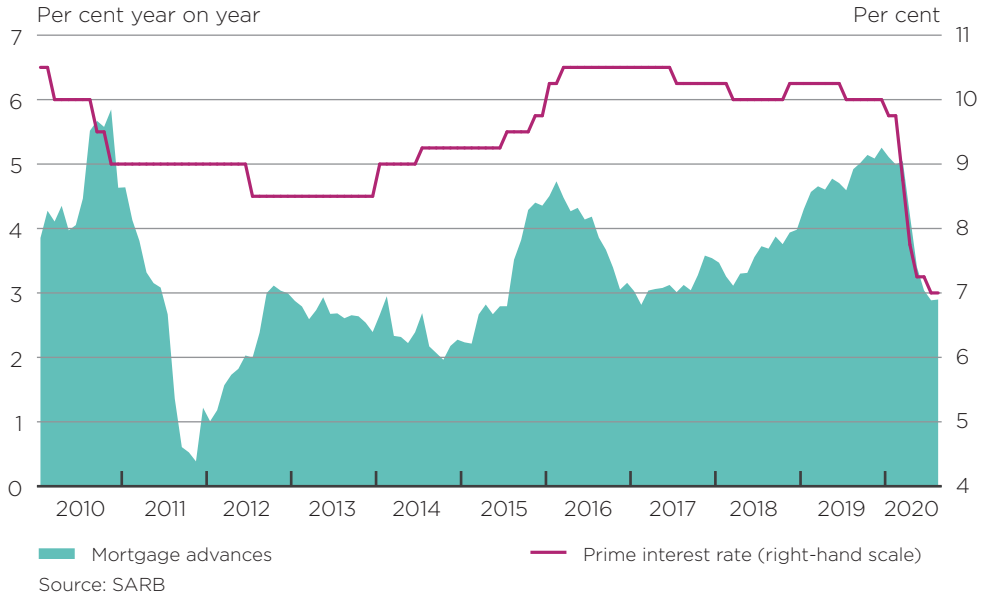


Sources: BIS, Absa, FNB, Stats SA and SARB

78 That is residential property price growth adjusted for inflation.

Growth in residential mortgage advances has been under pressure since the start of 2020. Growth in mortgage advances has not exceeded 6% (on a y/y basis) since 2009. This is another indication of the muted housing market conditions that have prevailed in South Africa since the global financial crisis. While mortgage advances growth did accelerate slightly from 2017 to 2019, the rate of growth has slowed consistently since the start of 2020 to a rate of 2.9% y/y in August 2020 (see Figure 77). It is important to note that this reflects changes in the total stock of mortgages, therefore the growth rate tends to adjust relatively slowly to changing market conditions.

Figure 77: Mortgage advances and the prime interest rate

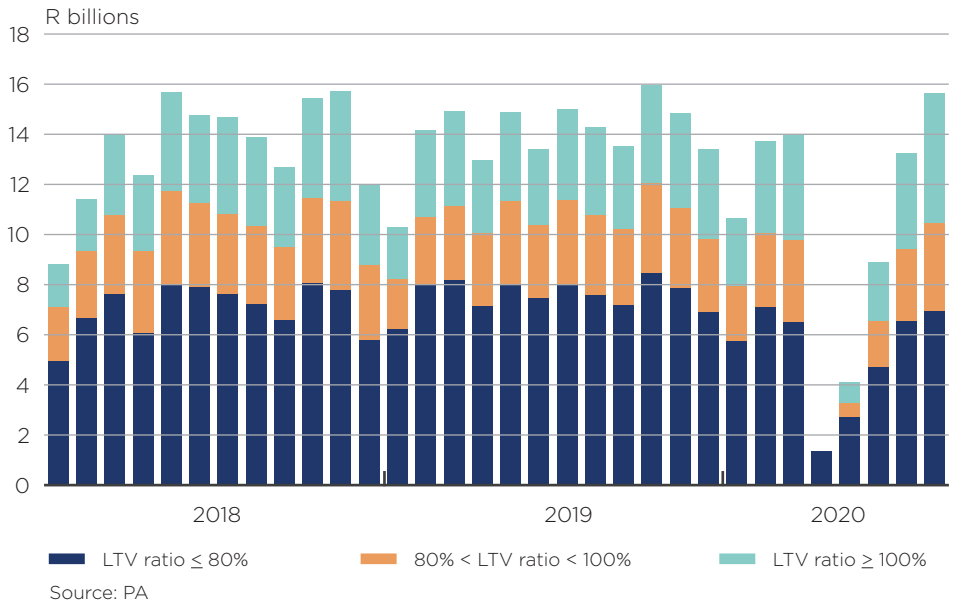


Source: SARB

Monthly new mortgage originations have picked up as the lockdown has eased. Figure 78 provides a clearer picture of recent trends by depicting the value of new mortgage credit extended. After averaging R14 billion per month in 2019, new mortgage credit dropped sharply to only R1.4 billion in April (amid level 5 lockdown). However, as the economy has reopened, new mortgage credit has recovered, reaching a level of R15.6 billion in August 2020. Furthermore, between June and August of 2020, 30% of new mortgage credit has been extended at a loan-to-value (LTV) ratio[79] greater than or equal to 100%. This is up from an average of 21% over the period between 2017 and 2019, suggesting that banks have increased their risk appetite recently in the mortgage market (at least for those borrowers who were approved for a loan).

79 LTV ratios are an important indicator of risk taking because they indicate the size of the down payment that a borrower is required to make during the initiation of a loan. For example, an LTV of 100% means that no-down payment is made by the borrower, while an LTV of 80% means that a 20% down payment is made.

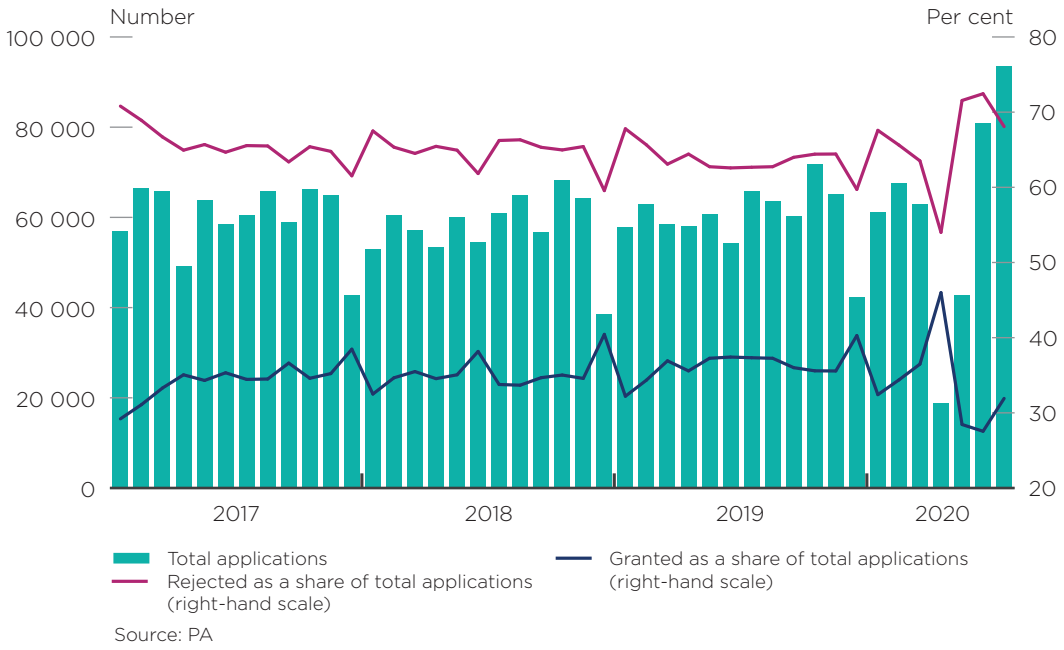
Figure 78: New mortgage credit extended segmented by loan-to-value ratios



Source: PA

Mortgage credit demand has rebounded strongly in recent months, likely driven by improving economic activity and low interest rates. Mortgage credit applications fell sharply in April 2020 to 18 670, the lowest level since at least 2013. However, applications have recovered strongly in the months since April, rising to 93 403 in July. While it is likely that the recovery reflects pent-up demand, it is worth noting that cumulative applications for the first seven months of 2020 are approximately 2% higher than over the same period in 2019. Therefore, despite a challenging economic backdrop, demand for mortgage credit is strong. This is likely due to the favourable interest rate environment. Nevertheless, rejection rates remain higher than usual, with more than two-thirds of mortgage loan applications rejected in each of the three months to July 2020 (see Figure 79).

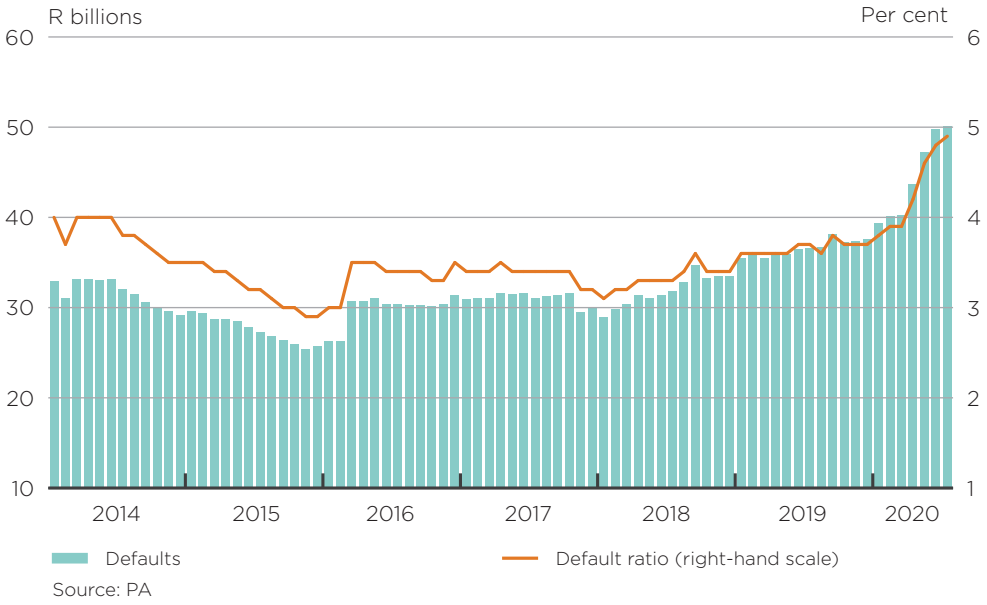
Figure 79: Mortgage credit applications



Source: PA

The pandemic has resulted in a significant deterioration in household mortgage affordability. Mortgage defaults, which are defined as payments that are 90 days overdue, have followed a consistent upward trend since early 2018 (see Figure 80). Defaults have accelerated significantly since the second quarter of 2020. At the start of 2020, the value of mortgage defaults was R39 billion, with the default ratio at 3.8% of total loans outstanding. The value of mortgage defaults and the default ratio have since jumped to R50 billion and 4.9% respectively in July 2020, the highest levels observed since the global financial crisis. As a large volume of mortgage loans were restructured due to COVID-19, these mortgages may not yet appear as defaults on the books of lenders. Thus, a further increase in defaults could occur over the coming months as lenders begin to realise defaults on restructured loans that cannot be repaid.

Figure 80: Mortgage defaults



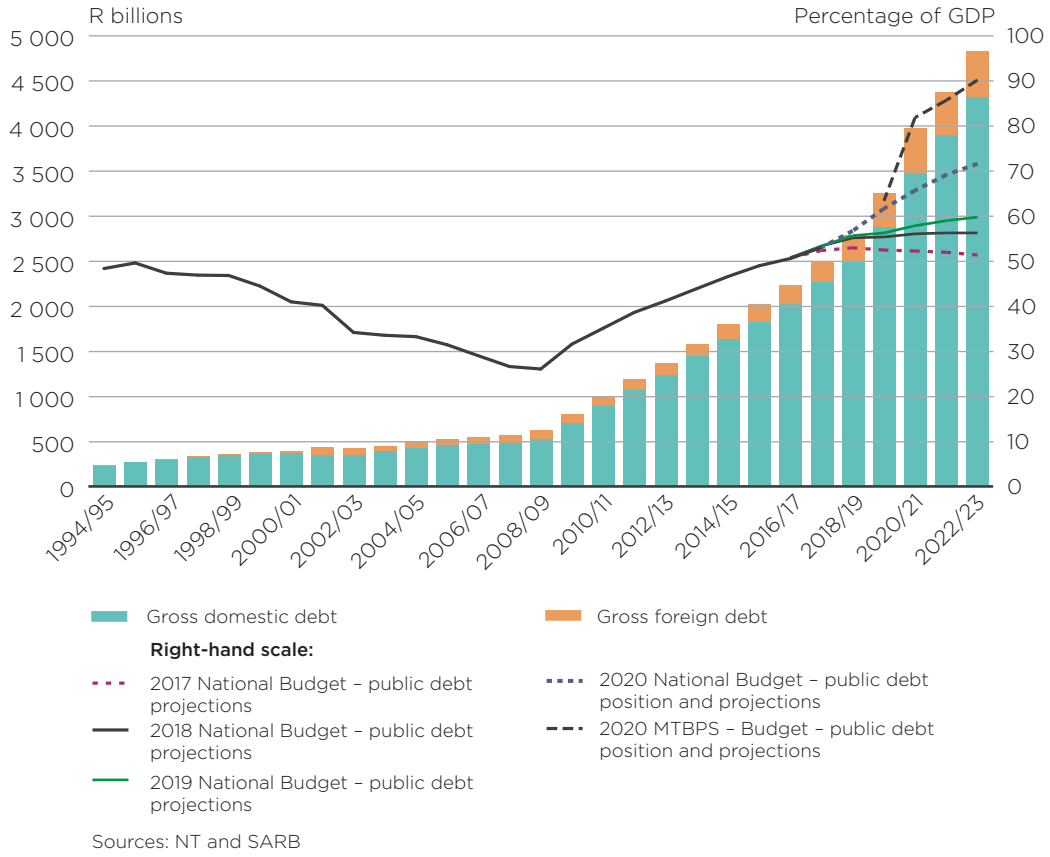
Source: PA

Mortgage defaults could pose a significant risk to the banking sector. The size of each mortgage loan is much larger than any other retail loan category, meaning that even a relatively small number of defaults could begin to erode a bank's provisions. Also, there is a risk that banks delay resolving problem mortgage loans as foreclosure in the current economic environment is a relatively unattractive prospect for banks. This is because the legal process to repossess a house takes a considerable amount of time, and too many repossessed houses in one suburb could depress house prices and affect the value of housing collateral.

Government

Government debt is set to increase rapidly over the medium term from already elevated levels. Gross government debt stood at 63.5% of GDP at the end of March 2020. National Treasury projects that over the 20-year period from 2003 to 2023 gross debt will increase by a factor of almost 12, from R430 billion to R5.1 trillion. As a share of GDP, gross public debt is expected to rise to approximately 90% of GDP by 2023, from 34.1% in 2003 and a low of 26% in 2009 (see Figure 81).

Figure 81: Government debt levels

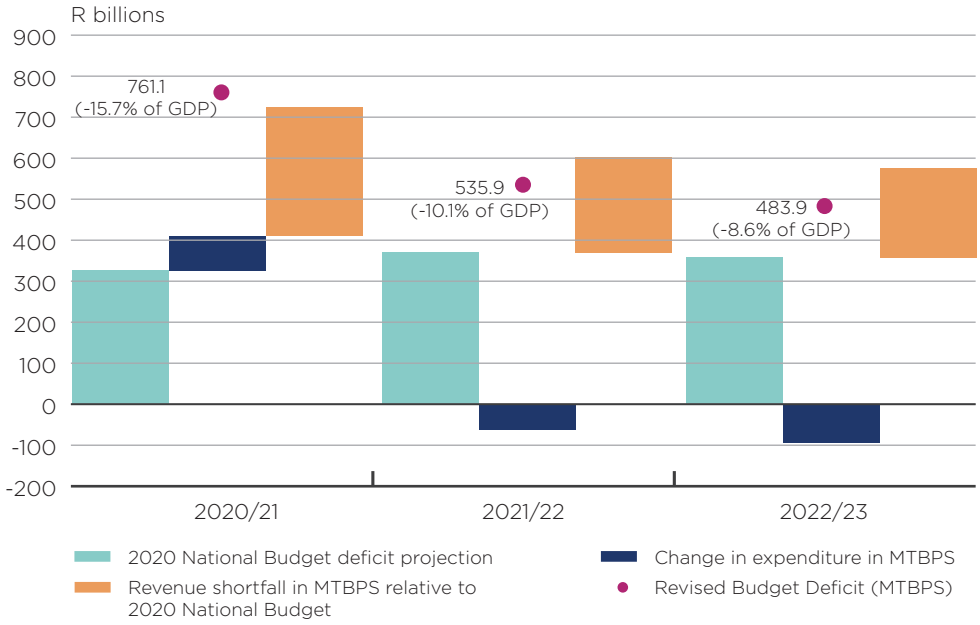


Sources: NT and SARB

The government budget deficit is projected to peak in the current fiscal year, but will remain sizable over the following three years. The consolidated budget deficit for this fiscal year was estimated at 6.8% of GDP in the 2020 National Budget, but is now projected to reach 15.7% of GDP, largely as a result of a R313 billion projected shortfall in tax revenue due to the impact of COVID-19. The projected primary balance[80] of -9.8% of GDP in the current fiscal year and -5% of GDP next year indicates that even after accounting for interest expenses, public expenditure will significantly exceed revenue. Furthermore, the challenge posed by COVID-19 to many state-owned entities (SOE) could result in the need for government to provide additional financial support to these entities beyond that which has been budgeted for.

80 The primary balance is the budget balance, excluding interest payments.

Figure 82: Government budget deficit projections

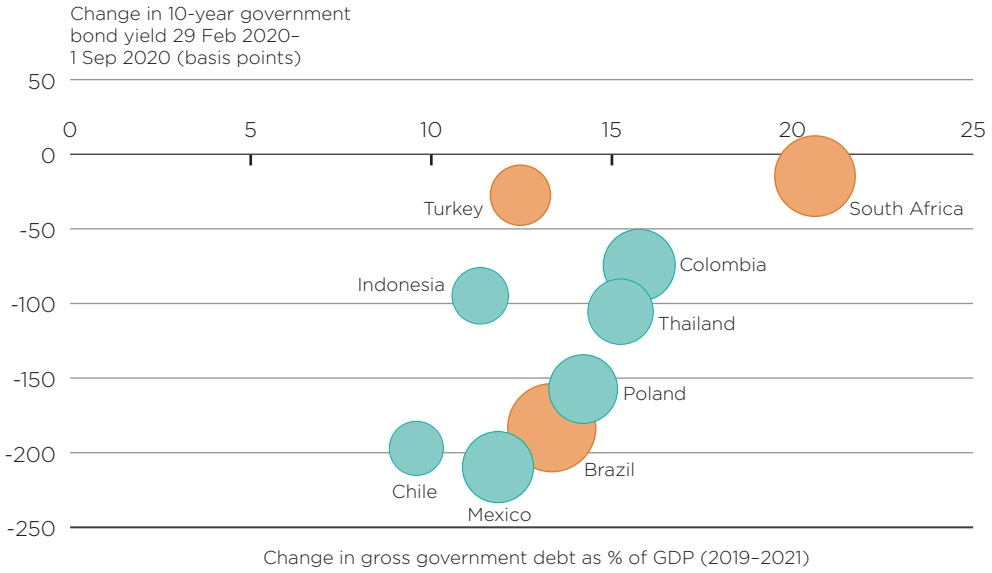


Positive values in the chart above reflect increased borrowing requirements relative to the 2020 National Budget, while negative values reflect planned savings that reduce the size of the budget deficit.

Source: NT

COVID-19 has caused a sharp increase in public debt across emerging market economies, but long-term bond yields have fallen since February. Figure 83 shows that between 2019 and 2021 most large emerging market economies will experience an increase in public debt (based on IMF forecasts), largely linked to the impact of COVID-19. Despite the rise in financing needs, longer term bond yields have fallen in these countries as term interest rates in advanced economies have declined amid large scale central bank policy easing (thereby making higher yielding emerging market debt more attractive). However, the effect on bond yields has been different across countries. Among large emerging markets, South Africa has experienced one of the smallest bond yield declines between February (pre-COVID-19) and September 2020. This is likely related to the fact that the South African sovereign lost its last remaining investment grade credit rating in March (resulting in the exclusion of domestic bonds from the World Government Bond Index (WGBI)), and public debt domestically is set to rise faster than in most other emerging market economies over the medium term.

Figure 83: Emerging market public debt and borrowing costs

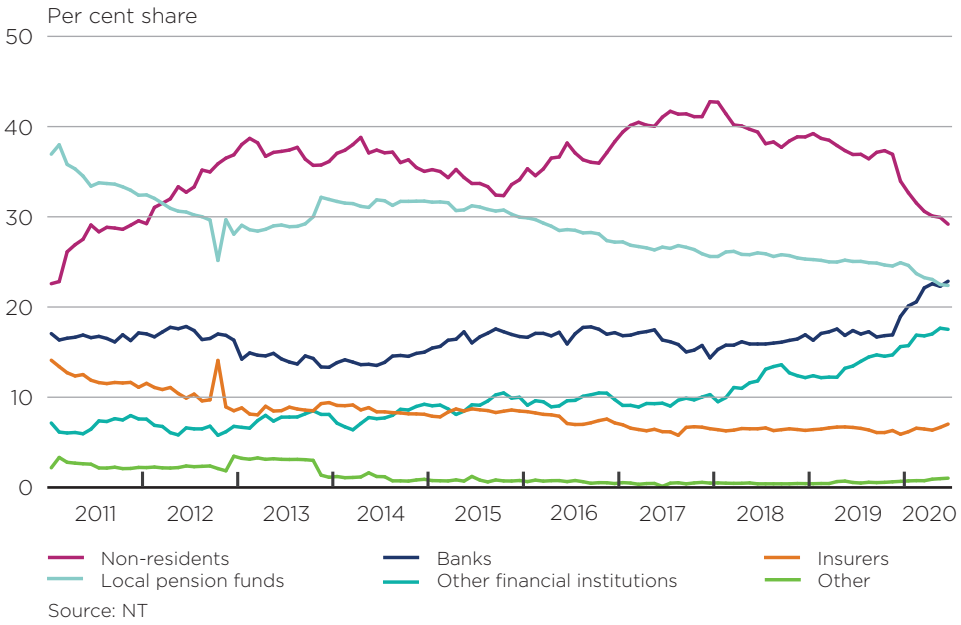


The size of each bubble represents the 2021 public debt forecast for each country. The green bubbles are countries with a sovereign credit rating above investment grade from S&P, while orange bubbles represent countries with a sub-investment grade sovereign credit rating from S&P.

Sources: Bloomberg, IMF and S&P

Non-resident holdings of government debt have decreased steadily in recent months. After peaking at nearly 43% in 2018, non-resident holdings of government bonds have declined consistently to reach an eight-year low of 29% in September 2020. This is a concerning development as weaker international demand for domestic bonds could make it more expensive for government to fund the large budget deficits projected over the medium term. Domestic banks have taken up the majority of the bond holdings that non-resident investors have sold. Consequently, domestic banks now hold a larger share of bonds than at any time in the past decade, which has increased the financial sector-sovereign nexus risks described in Chapter 1. As South Africa's government bonds were excluded from the WGBI in May 2020, it is likely that foreign holdings of domestic government bonds will remain structurally lower.

Figure 84: Holdings of government debt



Source: NT

A steep government bond yield curve points to concerns regarding the sustainability of public debt. Based on monthly data collected by the SARB, at no point in the past 60 years has the bond yield curve[81] been steeper than it was in August 2020 (see Figure 85). The recent steepening of the yield curve was driven by a sharp drop in short-term bond yields (in line with monetary policy easing), while longer term bond yields have remained relatively elevated (although they have fallen approximately 100 basis points from their April 2020 highs). Recent research[82] conducted by the SARB indicates that the term premium[83] embedded in domestic bond yields has increased in recent years, and that this increase is likely to be linked, at least in part, to increased fiscal risk.[84] National Treasury itself has indicated that 'the steepness of the yield curve indicates investor concerns about fiscal sustainability'.[85] There is an important dynamic relationship between borrowing costs and debt sustainability. In particular, average debt service costs that exceed the rate of economic growth create the need for a larger primary budget surplus, just to stabilise debt at a given level of GDP (all other things equal). This

81 The yield curve steepness is calculated by subtracting the average yield on government debt of a maturity over 10 years from the average yield on government debt of a maturity of between 0 and 3 years.

82 Soobyah and Steenkamp. 2020. *Term premium and rate expectation estimates from the South African yield curve*. SARB Working Paper 20/03.

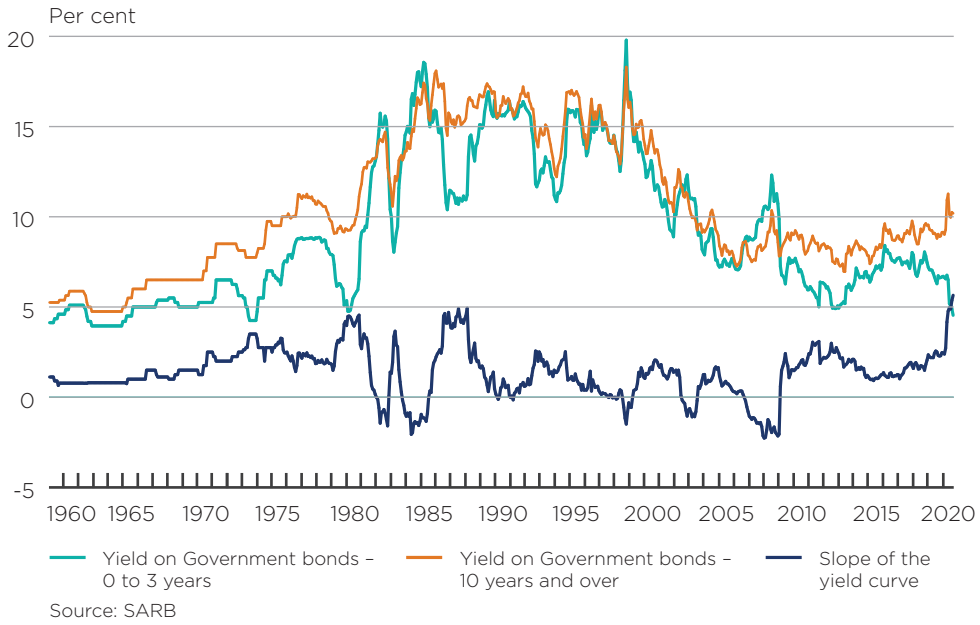
83 The term premium reflects the compensation that investors require to invest in a single long maturity bond rather than rolling over a series of shorter maturity investments.

84 For example, the term premium increased when South Africa's sovereign credit rating outlook was lowered.

85 National Treasury. 2020 Supplementary Budget.

interaction can create a debt spiral if concerns about debt sustainability drive up debt service costs, which in turn give rise to further debt sustainability concerns and so forth. Therefore, arresting the rise in public debt becomes more challenging as the stock of debt increases.

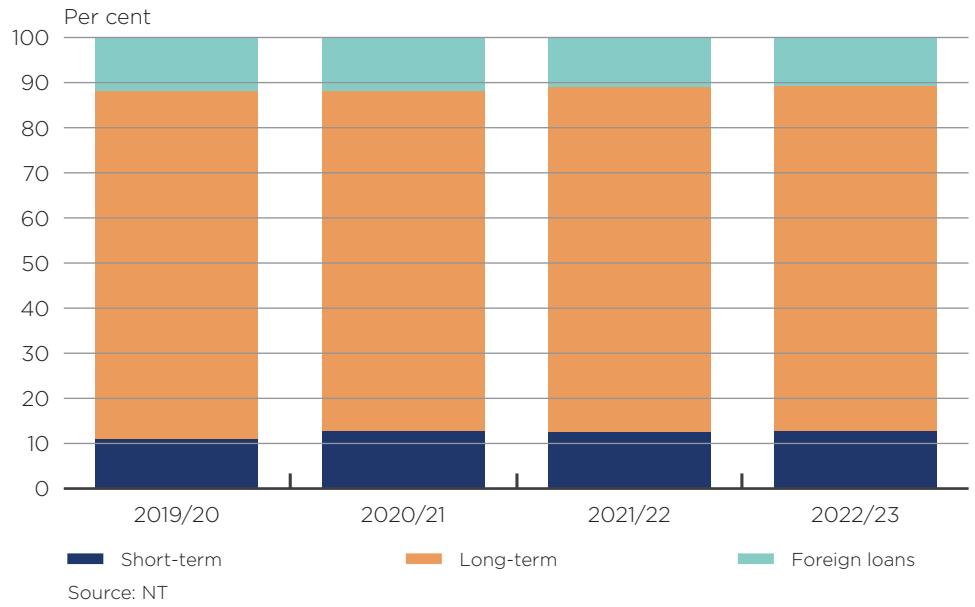
Figure 85: Domestic government bond yields



Source: SARB

The maturity and currency profile of public debt is an important mitigant against the risk of a debt spiral. Long-term domestic currency debt continues to make up the majority of government debt (see Figure 86), which reduces both roll-over and exchange rate risk, while limiting the degree to which government debt service costs are affected by short-term market fluctuations. Refinancing risk is further limited by the redemption profile of the debt, which is varied and spread over a period of approximately 30 years. Government has increased reliance on short-term debt in the current fiscal year to take advantage of the relatively lower yields on this debt. However, at approximately 12% of total debt, short-term debt remains relatively low. Meanwhile, foreign loans have increased slightly in the current fiscal year, on the back of borrowing from international financial institutions. But these loans also make up a relatively small share of total government's debt at 11%.

Figure 86: Composition of outstanding government debt



Source: NT

To ensure sustainability, government debt will need to be stabilised. Given the rapid increase in debt that has occurred in the current year, a fiscal consolidation is required to ensure that the debt remains sustainable. This consolidation, which stabilises (or reduces) the debt, is likely to require a sustained primary budget surplus.

Appendix: Banking and insurance indicators

Banking sector indicators

	2016	2017	2018	2019	2020*
Market share in terms of assets (five largest banks)	85	90	90	90	90
Gini concentration index	83	83	83	83	84
Herfindahl-Hirschman Index (HH-index)	0.2	0.2	0.2	0.2	0.2
Banks' share prices (year-on-year percentage change)	-10.2	13.5	22.2	-0.9	-2.1
Total assets (R billions)	4 857	5 006	5 311	5 769	6 191
- Year-on-year percentage change	8.5	3.1	6.1	8.6	11.1
Total loans and advances (R billions)	3 693	3 791	3 945	4 249	4 454
- Year-on-year percentage change	7.5	2.7	4.0	7.8	7.7
Total capital adequacy ratio	15.0	16.3	16.4	16.5	16.2
Tier one capital adequacy ratio	12.2	13.4	13.3	13.5	13.2
Common equity tier one capital adequacy ratio	11.8	12.9	12.8	12.7	12.4
Impaired advances (R billions)**	115	108	137	162	178
Impaired advances to gross loans and advances	3.1	2.8	3.5	3.8	4.0
Specific credit impairments (R billions)	48	47	61	74	78
Specific credit impairments to impaired advances	41.8	43.7	44.3	45.5	44.0
Specific credit impairments to gross loans and advances	1.3	1.2	1.5	1.7	1.8
Return on assets (smoothed)	1.2	1.3	1.3	1.2	1.1
Return on equity (smoothed)	17.1	16.8	15.8	15.3	14.1
Interest margin to gross income (smoothed)	57.0	57.2	56.7	56.8	57.5
Operating expenses to gross income (smoothed)	55.1	55.7	57.2	58.2	58.4
Liquid assets to total assets (liquid asset ratio)	9.3	9.6	10.2	11.1	11.0
Liquid assets to short-term liabilities	18.1	19.0	20.5	22.4	22.0
Liquidity coverage ratio	98.2	116.4	125.1	146.9	140.1

* Data for 2020 are up to and including July. All data is averaged for the year shown. Percentages unless stated otherwise.

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

Source: SARB

Insurance sector indicators

	2015	2016	2017	2018	2019	June 2020
Market share in terms of assets (five largest life insurers)	74	74	73	73	74	74
Market share in terms of gross written premiums (five largest non-life insurers)	45	48	47	57	58	58
Balance sheet						
Total assets: life insurers (R billions)	2 584	2 672	2 929	3 011	3 144	3 102
Total assets: non-life insurers (R billions)	143	149	161	197	207	221
Total liabilities: life insurers (R billions)	2 431	2 514	2 769	2 638	2 761	2 768
Total liabilities: non-life insurers (R billions)	84	91	98	115	117	128
Profitability						
Gross written premiums: life insurers (R billions)	479	499	486	530	551	271
Net profit before tax and dividends: life insurers (R billions)*				45	45	-16
Individual lapse ratio: life insurers	72	56	63	61	91	126
Gross written premiums: non-life insurers (R billions)	120	127	137	144	160	78
Combined ratio: non-life insurers	77	87	77	97	97	94
Operating profit ratio: non-life insurers	22	21	22	15	23	17
Solvency and capital*						
Solvency capital requirement cover ratio (median): life insurers				1.9	2.0	1.9
Minimum capital requirement cover ratio (median): life insurers				4.3	4.2	4.3
Solvency capital requirement cover ratio (median): non-life insurers				1.8	1.8	1.8
Minimum capital requirement cover ratio (median): non-life insurers				3.9	4.0	3.8

All data are averaged for the year shown. All the numbers indicate percentages, unless stated otherwise.

* These returns are only available from 2018 due to changes in reporting requirements.

Source: SARB

Abbreviations

ASISA	Association for Savings and Investment South Africa
BER	Bureau for Economic Research
BIS	Bank for International Settlements
CAR	capital adequacy ratio
CET1 (capital)	common equity tier one (capital)
CIS	collective investment scheme
EBIT	earnings before interest and taxes
EDF	expected default frequency
EM	emerging market
FSB	Financial Stability Board
FSC	Financial Stability Committee
FSCA	Financial Sector Conduct Authority
FSOC	Financial Sector Oversight Committee
FSR	Financial Stability Review
FSR Act	Financial Sector Regulation Act 9 of 2017
FX	foreign exchange
GDP	gross domestic product
HQLA	high-quality liquid asset
IFRS	International Financial Reporting Standard
IIF	Institute of International Finance
IMF	International Monetary Fund
IRB	internal ratings-based
JSE	JSE Limited
LCR	liquidity coverage ratio
LTV (ratio)	loan-to-value (ratio)
MMF	money market fund
MPC	Monetary Policy Committee
NBFI	non-bank financial intermediation
NCR	National Credit Regulator
NFC	non-financial corporate
NPL	non-performing loan
NT	National Treasury
OECD	Organisation for Economic Co-operation and Development
OFI	other financial institution
P2A	Pillar 2A Capital requirement
PA	Prudential Authority
RAM	risk assessment matrix
Repo	repurchase
rhs	right-hand side
RMB	Rand Merchant Bank
ROE	return on equity
RWA	risk-weighted asset
SARB	South African Reserve Bank
SCR	solvency capital requirement
SIFI	systemically important financial institution
SMEs	small and medium enterprises
S&P	Standard & Poor's
Stats SA	Statistics South Africa
UK	United Kingdom
US	United States
WGBI	World Government Bond Index