

The Impact of COVID-19 on the Risk Factors Affecting the South African Bond Market

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Abstract

Purpose: The purpose of this study is to analyse the effect of COVID-19 on the risk factors affecting the South African bond market. As such, the global economy resulted in a couple of total shutdowns in 2020 to minimise the spread of the COVID-19 virus. This has resulted in significant adjustments in monetary and fiscal policies to address the impact on the fiscus. South Africa also adopted a couple of adjustments which saw a drastic spike in the nominal debt issued to fund the increased budget shortfall. This came immediately after South Africa's exit from the World Government Bond Index after being rated sub-investment by all three major rating agencies.

Design/Methodology/Approach: The study takes inference on experiences from leading emerging markets with the same attributes as South Africa.

Findings: It was found that, even though South Africa is still well below the risk measures for debt management, the quantum of debt has increased significantly, thus putting pressure on the fiscus in absolute terms.

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INTRODUCTION

During the 2020/21 fiscal year, when the global economy was affected by the COVID-19 pandemic (International Monetary Fund (IMF) 2020), the IMF made recommendations to sovereign debt managers to curb the effect of the stress effected by the COVID-19 pandemic on the fiscus. The COVID-19 pandemic resulted in many states shutting down their economic activities, resulting in poor revenue collections, poor funding performance in the secondary market, and drastically increasing government expenditures in addressing the pandemic. It was indicated that the effect of the global stress on short-term funding liquidity is critical as most governments might be expected to experience increased financing requirements due to policies/strategies adopted to respond to the crisis. This was also evident in the case of South Africa, where significant adjustments were made to boost the unsustainable fiscal position observed over the past couple of years and then worsened by a severe decline in the economic and revenue outlook (National Treasury 2020).

A review is done on the leading emerging economies for more progressive reforms to address stressed economic environments on managing the government debt and government funding strategies. South Africa is part of the world's leading emerging economies group BRICS (Brazil, Russia, India, China and South Africa), which was founded in 2009. According to the South African Government (2013), the main aim of this group was to 'promote peace, security, development and cooperation; and further contribute significantly to the development of humanity and establishing a more equitable and fairer world'. The recognition of the country's contribution to shaping the socio-economic regeneration of Africa and its involvement in peace, security and reconstruction efforts on the continent led to South Africa's offer to join BRICS. Further, a developed financial system, and fiscal and monetary policy frameworks added to South Africa's advantage.

Table 1. Credit ratings for emerging markets

Country	Credit rating during 2008 crisis	Credit rating before COVID (2019)	Credit rating after COVID (2022)
Brazil	Standard and Poor: BBB negative Fitch: BBB- negative Moody's: Ba1 positive	Standard and Poor: BB- positive Fitch: BB- negative Moody's: Ba2 negative	Standard and Poor: BB- stable Fitch: BB- stable Moody's: Ba2 stable
Russia	Standard and Poor: BBB negative Fitch: BBB+ negative Moody's: Baa1 negative	Standard and Poor: BBB- negative Fitch: BBB negative Moody's: Baa3 negative	Standard and Poor: NR Fitch: NR Moody's: NR
India	Standard and Poor: BBB- negative Fitch: BBB- negative Moody's: Baa3 negative	Standard and Poor: BBB- negative Fitch: BBB- negative Moody's: Baa2 negative	Standard and Poor: BBB stable Fitch: BBB stable Moody's: Baa3 stable
China	Standard and Poor: A+ negative Fitch: A+ negative Moody's: A1 positive	Standard and Poor: A+ negative Fitch: A+ negative Moody's: A1 negative	Standard and Poor: A+ stable Fitch: A+ stable Moody's: A1 stable
South Africa	Standard and Poor: BBB+ negative Fitch: BBB+ negative Moody's: A3 negative	Standard and Poor: BB negative Fitch: BB+ negative Moody's: Baa3 negative	Standard and Poor: BB- stable Fitch: BB- stable Moody's: Ba2 stable

Source: World Bank and Trading Economics

It is evident that political instabilities and policy reforms have been significant drivers of deteriorating credit ratings in South Africa, Brazil and Russia, refer to Table 1. Brazil started to feel pressure from three major rating agencies in 2014 after being downgraded to one notch above the sub-investment grade by Standard and Poor. According to Korby (2014), Standard and Poor indicated a combination of 'fiscal slippage, the prospect that fiscal execution will remain weak amid subdued growth in the coming years, the constrained ability of government to adjust policy ahead of presidential elections, and some weakening in the country's external accounts'. It was further indicated by Bisseker (2014) that these reasons, which resulted in a rating downgrade for Brazil, do apply equally to South Africa, which was also subjected to political instabilities, poor economic growth and increasing debt levels.

Brazil tasted the first sub-investment/junk credit rating 2015 due to mounting political problems that have muddled economic policy (Brandimarte 2015). Fitch and Moody's followed in placing Brazil on sub-

investment credit rating, citing a further deterioration in debt ratios amid economic contractions, (Watts 2016). South Africa followed through in 2017, where it was rated sub-investment by Standard and Poor and Fitch citing economic contractions and political uproars that resulted in the removal of the finance minister in a late-night cabinet reshuffle by then-President Jacob Zuma. Moody's finally followed through in 2020, which resulted in the exclusion of South Africa from the WGBI after being downgraded to sub-investment grade by all three major rating agencies, which is the minimum requirement to stay in the index. According to Hamill (2022) and FTSE Russel (2021), China was the only country in BRICS, which is part of the WGBI, thus holding 3.07 per cent of the WGBI on a market value-weighted basis at its total exposure. India remained on a watchlist by FTSE Russel for possible country reclassification and inclusion in the WGBI and Emerging Markets Government Bond Index (EMGBI). Both India and China have investment credit ratings with a stable outlook. Further, South Africa, Brazil and China remained in the EMGBI, which has the minimum requirements of a C rating from Standard and Poor and a Ca rating from Moody's.

Russia enjoyed being above investment grade with all three major rating agencies, even during the 2008 global crisis and the COVID-19 stress. However, a significant decline was realised in 2022 following the financial fallout over Russia's invasion of Ukraine. Russia saw a six-notch downgrade to B3, which is six notches below investment grade. It was further indicated that all three major rating agencies had withdrawn their rating mandates following European Union's decision to impose sanctions on Russia to ramp up economic pressure on the country (Chappell 2022).

Table 2. Deciding factors for emerging markets

Economic variable	Brazil	Russia	India	China	South Africa
Economic growth (2021)	5.00 %	5.60 %	8.70 %	8.40 %	4.90 %
Income per capita (2021)	\$15 600	\$32 070	\$7 130	\$19 160	\$14 340
CPI inflation (2022)	9.59 %	13.80 %	6.70 %	2.00 %	6.90 %
Debt to GDP (2022)	72.90 %	13.40 %	55.10 %	21.40 %	71.00 %
10-year gov yield (Dec 2022)	12.69 %	10.34 %	7.33 %	2.88 %	10.19 %
Repo rate (Dec 2022)	13.75 %	7.50 %	6.50 %	2.75 %	7.00 %

Source: World Bank and Trading Economics

South Africa and Brazil's economic positions are relatively equivalent, which could be attributed to the same political and economic instabilities realised as it was learned in Table 2. The countries are both rated on sub-investment credit rating where rating agencies have cited almost the same issues faced by these two emerging economies. Subdued economic growth has been evident for the past decade, with an average growth rate of 0.98 per cent and 0.36 per cent for South Africa and Brazil, respectively. While South Africa's CPI inflation was above the target band of 3 and 6 per cent in 2022, it was observed that over the past decade, it remained well within the band with only two exceptions. A downward trend was observed a few years before the COVID-19 pandemic (Statistics South Africa 2023). The uptick in 2022 above the upper band was mainly driven by heightened geopolitical uncertainty from the Ukraine/Russia war, which resulted in persistent increases in food and energy prices in both developed and emerging markets (National Treasury 2023). The South African 10-year government bond yield remained relatively stable over the past decade, just before the COVID-19 pandemic, at an average of 8.5 per cent. A 300 basis point weakening was observed in March 2020 immediately after the WGBI exit, coupled with a total shutdown impacted by the COVID-19 shock. Even though some level of stability normalised back to pre-COVID shock, the global volatility impacted by Ukraine/Russian war had fuelled some instabilities and increases in the year 2022 (National Treasury 2023). This has resulted in weaker yields above 10 per cent for most of 2022.

In the case of Brazil, CPI inflation has averaged around 5.79 per cent over the past decade, which is within the desired target range. However, there were some jumps in 2015 and 2016 way above the then target range of 2.5 and 6.5 per cent which resulted in band tightening in 2017 from ± 2 per cent allowance on the mid target of 4.5 per cent to ± 1.5 per cent (Oxford Analytica 2015). After a spike in prices during 2015 and 2016, the move was to boost their credibility to regain the market's trust and ensure government commitment to lowering inflation. De Bolle (2015) indicated that the main driver for the inflationary spike was the electricity and fuel price correction policy implemented when the current government took office in 2015. The hikes constituted of 50.4 cent spike from residential energy, a 22 per cent spike from cooking gas and an 18.6 per cent spike from gasoline, thus leading to a 12-month inflationary spike of 14 per cent in administered prices, which account for a 25 per cent of Brazilian CPI inflation. However, a couple of years pre-COVID stress, inflation in Brazil was well contained below the midpoint inflation target of between 4.25 and 4.5 per cent.

Given that Brazil is a commodity country, international increases in commodity prices and continued political instabilities fuelled the inflation spike to 8.3 per cent in 2021 (Carrara 2022). The same volatilities were observed on the 10-year government bond yield over the past decade. At the height of political instabilities in 2015, the 10-year government yield weakened to above 15 per cent. A downward trend was

also observed a couple of years before COVID-19; however, in line with global volatility tracking the pressures due to Ukraine/Russia war, weaker rates were observed in 2022.

Over the past decade, Russia's economic growth has been performing relatively better pre-COVID crisis, except for a -2 per cent contraction observed in 2015. According to Dabrowski and Collin (2019), the contraction was driven by a combination of a sharp decline in the international price of oil, which is Russia's main export item, and the conflict with Ukraine, which resulted in United States and European Union sanctions against Russia, and Russian countersanctions. This has also negatively affected the inflation rate, which increased to 15.53 per cent due to the same geopolitical issues. A recovery trajectory was observed pre/post-COVID stress, hammered by Russia's recent unprovoked and unjustified Ukraine invasion in February 2022 (Welt 2022). This has resulted in the European Council adopting a couple of sanctions against Russia and Belarus, which aimed to weaken Russia's ability to finance the war and to specifically target the political, military and economic elite responsible for the invasion. As such, inflation increased by over 100 per cent to 13.8 per cent in 2022 compared to the prior year. A 10-year government bond yield also weakened by around 200 basis points over the same period. While the economy still showed positive growth in 2022, the World Bank, the IMF, and the Organisation for Economic Cooperation and Development (OECD) expect the Russian economy to continue to shrink in the short term.

METHODS

Per the overall objective of this study, the study is qualitative and looks at the performance of measures of the risk factors affecting the South African bond market. In 2014, the South African government adopted some risk measures and benchmark ranges/limits for debt portfolio management (National Treasury 2014). These risk measures were adopted to manage the government debt portfolio against inflation risk, refinancing risk in the short-term and currency risk. Table 3 indicates that, as of 31st March 2023, most risk factors are well within the benchmark range/limit except for the weighted term-to-maturity of inflation-indexed/linked bonds, which is 1.2 years below the lower limit of 14 years.

Table 3. South African debt risk benchmarks

Description	Benchmark range or limit	2022/23	2023/24
		Estimates	
Treasury bills as % of domestic debt ¹	15.0	9.9	10.4
Long-term debt maturing in 5 years as % of bonds	25.0	16.0	16.1
Inflation-linked bonds as % of domestic debt	20-25	23.9	22.0
Foreign debt as % of total debt	15.0	11.7	11.2
Weighted term-to-maturity of fixed-rate bonds and Treasury bills (years)	10-14	11.2	10.6
Weighted term-to-maturity of inflation-linked bonds (years)	14-17	12.8	13.6
Other indicators (weighted average)			
Term-to-maturity of total debt (years)		11.6	11.2
Term-to-maturity of foreign debt (years)		12.2	12.2

1. Excludes borrowing from the Corporation for Public Deposits and retail savings bonds

Source: (National Treasury 2023: pp.82)

The total value of the South African government bonds/debt listed in the Johannesburg Stock Exchange (JSE) was over R2 trillion in 2018, accounting for around 90 per cent of the reported liquidity (Johannesburg Stock Exchange 2018). As such, the South African government debt is exposed to the following market risks:

- **Liquidity risk:** As Jonasson and Papapioannou (2018, 7) indicate, liquidity risk refers to 'the risk of investors facing a sudden diminishing trading volume of a bond or a series of bonds in the secondary market'. A lower trading volume/tradability in a bond might result in a higher cost of borrowing or low demand. A government institution issuing a bond should usually assess the market's demand around the prospective maturity before issuing the bond. The study looks at the performance of the weekly auction for inflation-indexed bonds in the primary market over the COVID-19 period. This is due to the illiquid nature of the instruments, and the poor auction performance might result in a funding shortfall for the fiscus. Weekly auctions are measured by the bid ratio which is defined as the total bid amount (in rand terms) as a ratio of the nominal amount offered for instrument i :

$$\text{bid ratio}_i = \frac{\text{total bid amount}_i}{\text{nominal amount on offer}_i} \quad (1)$$

The average bid for the week k is calculated as the weighted average taking into consideration the total nominal amount issued into instrument i at time k :

$$\text{average bid}_k = \frac{\sum_{i=1}^n \text{total nominal issued}_{i,k} * \text{bid ratio}_{i,k}}{\sum_{i=1}^n \text{total nominal issued}_{i,k}} \quad (2)$$

where:

n is the total number of instruments issued in a week.

This is further averaged over a month to obtain monthly average bid ratios. The study further looks at bond holdings by different institutions to analyse the effect of COVID-19 on investor preferences. Bond holding per institution is defined in a relative form as:

$$\text{Holding}_{i,t} = \frac{x_{i,t}}{\sum_{i=1}^n x_{i,t}} \quad (3)$$

where:

t is time in months,

i is the investing institution with a total sample of n ,

$x_{i,t}$ is the total amount of inflation-linked bonds held by investing institution i at time t .

- **Refinancing risk:** Government institutions rarely aim to pay off the capital amount owed when the bond matures. This process is mainly due to most governments running substantial budget shortfalls. Jonasson and Papapioannou (2018) defined refinancing risk as 'the ability to refinance a debt exposure at maturity as a result of a loss of market access or low investor appetite'; this is very crucial, which might lead to a costly refinancing process for government institutions who are at the mercy of investors. This study assesses the effect of increased borrowing in South Africa during the COVID-19 period, which aimed at addressing the impact of the crisis on the fiscus. This methodology follows the same presentation by major emerging countries to analyse refinancing risk. National Treasury of Brazil (2020), Institute for International Monetary Affairs (2020) and Bloomberg (2020) analyse the debt growth of Brazil, India and China, respectively; and the analysis further incorporates the effect of COVID-19 on debt levels and the impact of refinancing pressures in the short-term.

- **Inflation risk:** Inflation risk plays a critical role in bond pricing given that nominal bond yields are a function of, among others, inflation premium and real interest rate (Hördahl 2008). The consumer price index (CPI) rate in emerging markets is relatively higher (Ha et al. 2018), thus translating into a higher cost of borrowing in emerging economies. The study analyses the historical relationship between the movements in South Africa's CPI and the cost of borrowing in real terms over the COVID-19 stress period. Correlation analysis is further used to quantify the relationship on historical movements between the CPI and the real prime rate. Mukaka (2012) defined the correlation as the strength of the assumed linear association between variables in question and it ranges between -1 and 1. A sample correlation coefficient r is defined as:

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{[\sum_{i=1}^n (x_i - \bar{x})^2][\sum_{i=1}^n (y_i - \bar{y})^2]}} \quad (4)$$

where:

x_i and y_i are values for variables x and y .

Turney (2022) also indicated that Pearson's correlation coefficient could be treated as an inferential statistic. This implies that the correlation coefficient can be used to test the statistical hypothesis of whether a significant linear relationship between two variables does exist.

- **Sovereign risk:** As defined by Jonasson and Papapioannou (2018, 7), Sovereign credit riskiness is 'associated with the credit risk of a sovereign and the ability of a counterparty to fulfil its debt commitments'. Economic factors and the political environment are considered when determining this risk factor. Most foreign investors will require a government institution to achieve a particular credit rating standard by one or two big global rating agencies. The study analyses South Africa's historic credit rating by the three major rating agencies (i.e. Standard and Poor, Moody's and Fitch). Further, it incorporates the effects on the government bond market.

DISCUSSION

Liquidity risk

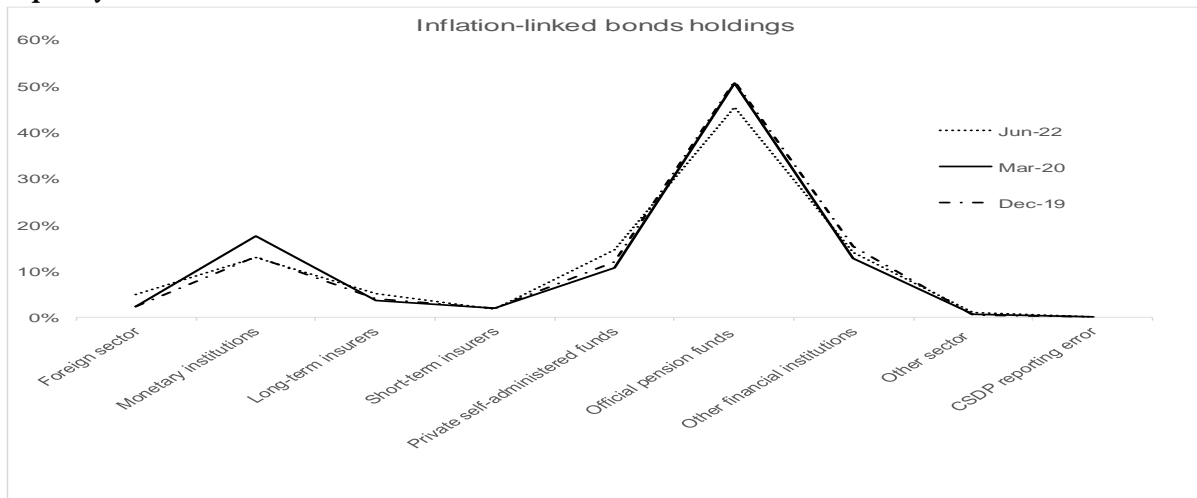


Figure 1. Historical inflation-indexed bond holding in South Africa

It can be observed in Figure 1 that during the period of COVID-19 high stress in March 2020, monetary institutions came through for government inflation-indexed bonds. They did increase their overall holdings in this instrument by five percentage points to 18 per cent; however, overall holdings for other institutions remained relatively the same compared to normal market conditions in December 2019. This implies that increased issuances into this bond instrument to cover the effect of the COVID-19 pandemic on the social economy are mainly carried by monetary institutions in line with the South African Reserve Bank mandate to boost funding liquidity by buying government stock during this period.

A significant decrease of five percentage points in the overall holding was observed in June 2022 on both monetary institutions and official pension funds, while an increase of 3 percentage points and four percentage points was observed in foreign investors and private self-administered funds holdings. This could be attributable to a cut in SARB's mandate to buy government stock and a redemption of the R212 (4.71 %, 2022) bond in January 2022. Holdings into the R212 bond were mainly dominated by monetary institutions and official pensions funds, which held 26 and 53 per cent of the nominal amount outstanding, respectively. However, given the illiquid nature of inflation-indexed bonds, official pension funds remain the instrument's biggest buyer, with the mandate to hedge their long-term liabilities against future inflation risk (National Treasury 2021).

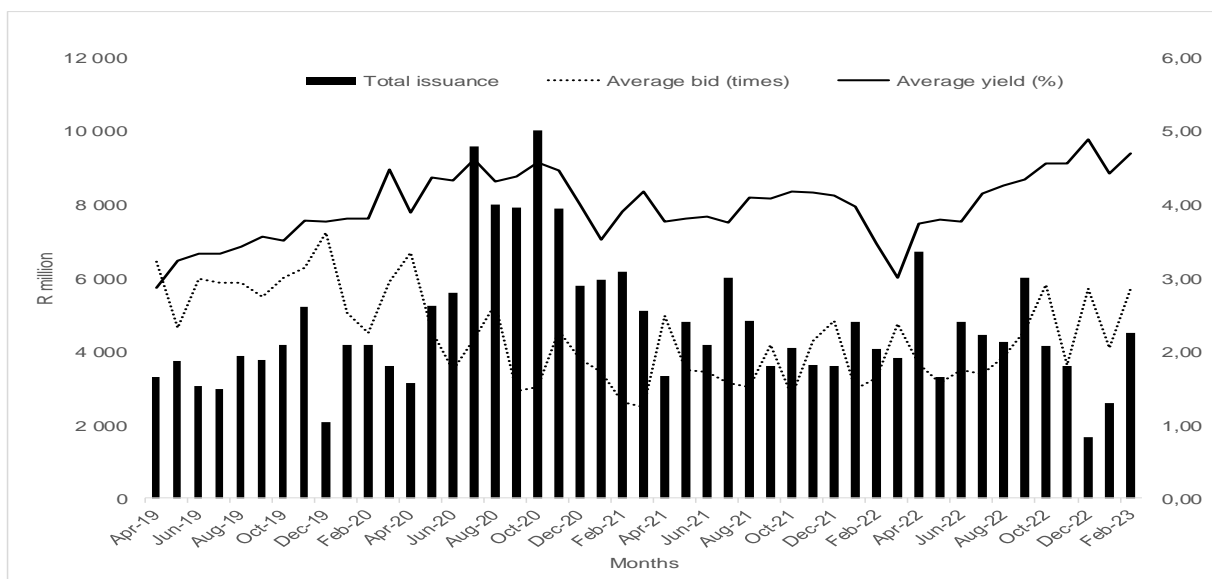


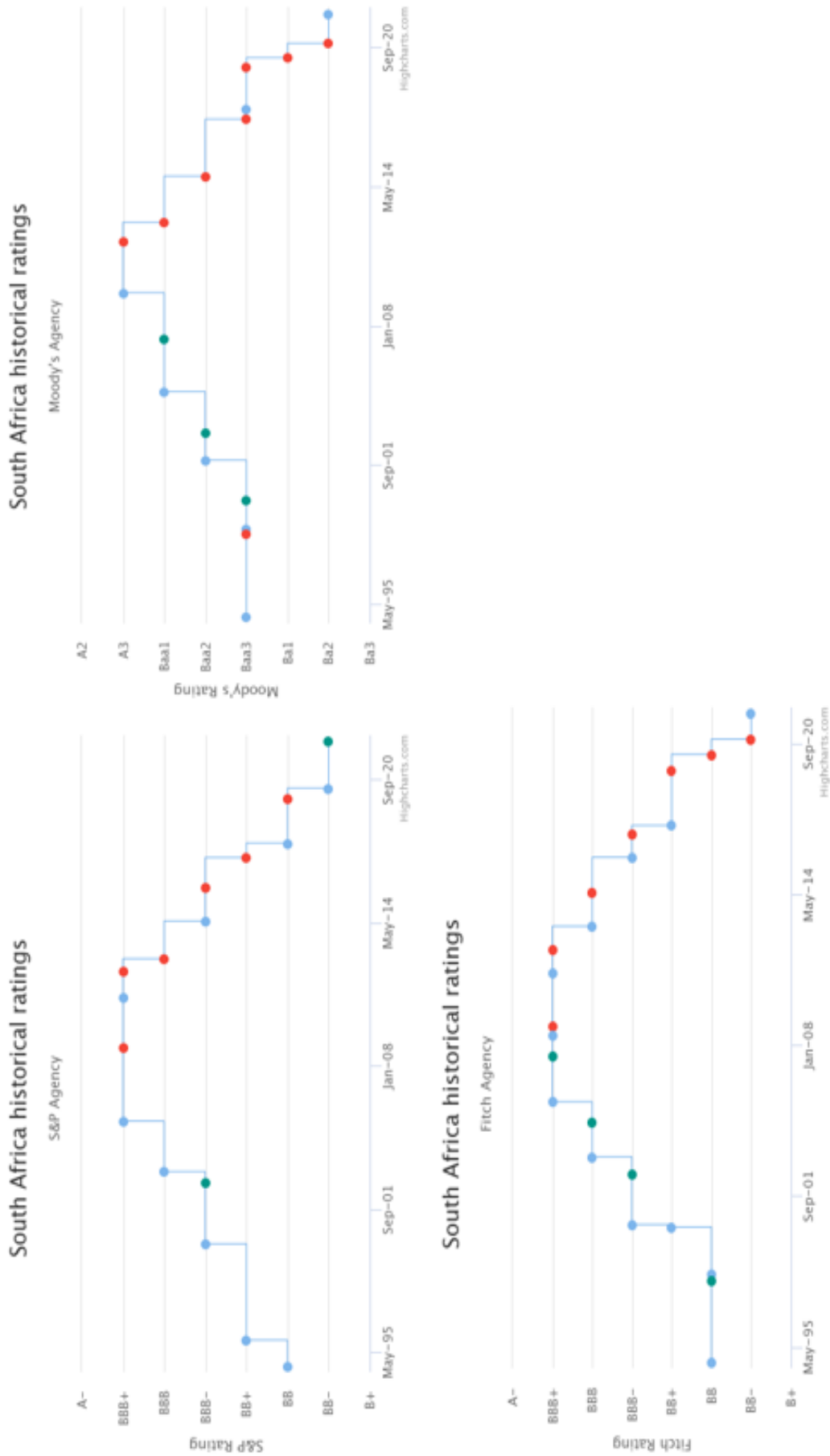
Figure 2. Primary market bond auction performance

It is evident from Figure 2 that pre-COVID-19 pandemic, government-issued inflation-indexed bonds

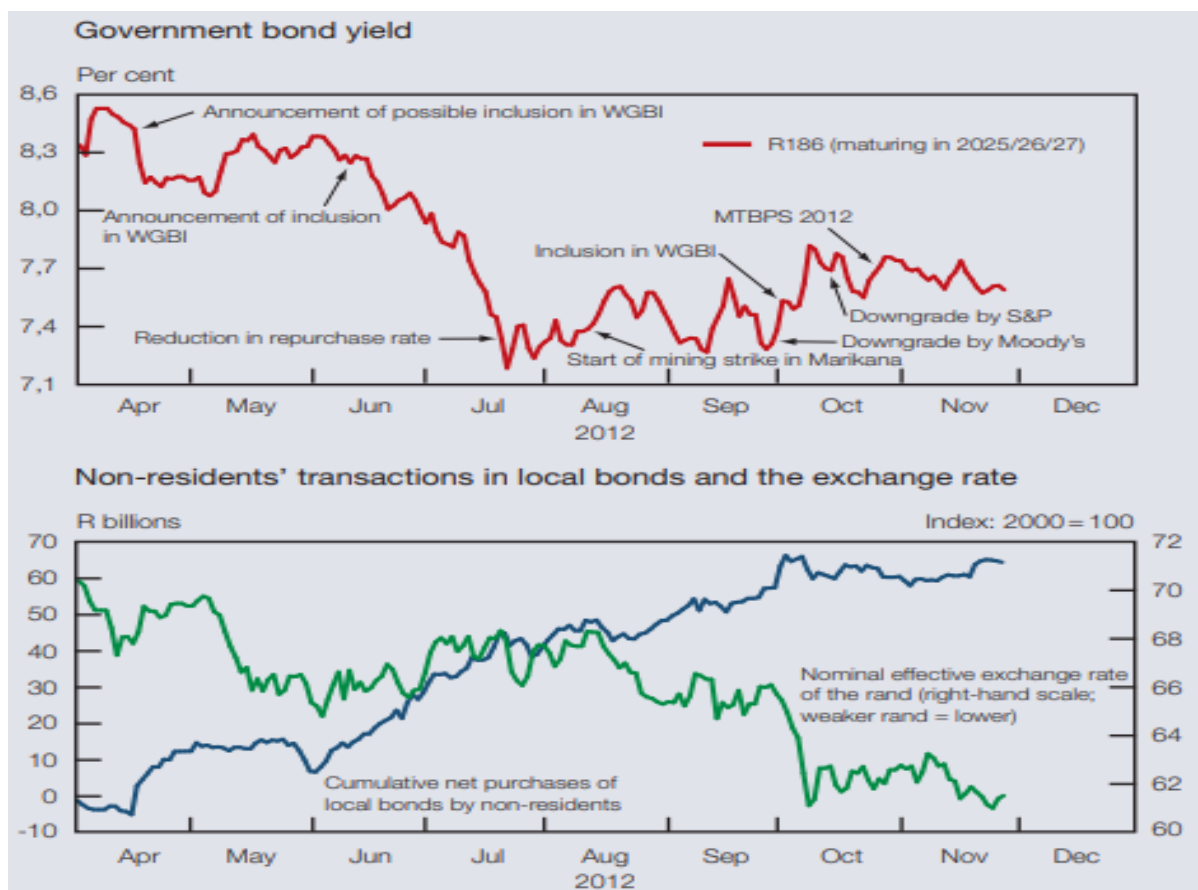
in the South African market had a slightly higher demand compared to during and post-COVID-19 crisis. Pre COVID-19, the average bid ratio was, on average, around 2.88 times the paper offered in the market. There is a practical level of stability in the average clearing yields over the 2019/20 financial year. A considerable dive was observed from May 2020, when issuances increased drastically to over twice pre-COVID levels. This happened at the same time when a significant decline in the demand for this bond instrument was observed. During the COVID-19 period, South African Reserve Bank's mandate to buy government stock helped to mop up most of the increase in government bond issuances which peaked at around R10 billion a month compared to the prior average of R3.6 billion a month in inflation-indexed bonds. The same liquidity continued in the 2021/22 financial year, where monthly bid-to-cover ratios averaged below two times the amount on offer; however, monthly average bond issuances into inflation-indexed bonds had declined to around R4.2 billion. In light of heightened global volatility and continued domestic political and economic instabilities in the 2022/23 financial year, average clearing yields weakened steadily by over 170 basis points between March 2022 and February 2023.

Sovereign risk

Since the South African government gained independence in 1994, it is evident in Figure 3 that, over time, South African local debt has been regarded as of value by the top three global credit rating agencies. The local debt credit rating improved over time and peaked at BBB+ for S&P and Fitch and A3 for Moody's. It is also observed that during the 2008 global financial crisis, credit ratings remained resilient at the highest credit rating rank. This could be attributable to relatively better economic and political conditions during that period.



Source: World Government Bonds (2021)
 NB: Green means a positive outlook assigned by the rating agency, blue means a stable outlook and red means a negative outlook
Figure 3. South African historical credit rating on local bonds



Source: South African Reserve Bank (2012: pp.1)

Figure 4. South African bond inclusion in the WGBI

Due to relatively better market sentiments in 2012 which included an adequately more robust domestic long-term credit rating and a market capitalisation exceeding US\$50 billion, it has made it possible for the South African domestic bonds to be included in the WGBI. As a result, South African bond yields strengthened significantly towards mid-2012, coupled with lower-than-expected inflation data and a cut in the repurchase rate, and further higher levels of global liquidity as foreign investors turned to emerging markets looking for higher returns. This is evidenced by a significant increase in the foreign/non-resident investors' holdings of South African government domestic bonds from 12.8 per cent in 2008 to 29.1 per cent in 2011 (National Treasury 2012). South Africa was the initial African country to participate in the WGBI, accounting for 0.45 per cent of the index's market value, with 12 South African government bonds included in the WGBI in October 2012 (South African Reserve Bank 2012).

However, it is noted in Figure 4 that these benefits were short-lived due to domestic volatility in the second half of 2012. The Marikana massacre, which Bruce (2015) indicated that it resulted in the fatalities of 34 mineworkers and seventy-eight left seriously injured following the open fire assault by the members of the South African Police Service in an attempt to contain a wildcat strike at Lonmin platinum mine in North West province. This resulted from a week-long protest in which the miners demanded a wage increase. Secondly, sovereign credit rating downgrades initially by Moody's from A3 to Baa1 and later by Standard and Poor from BBB+ to BBB with a negative outlook from both credit rating agencies. South African Reserve Bank (2012) indicated the main drivers for this change were weakening government's institutional strength, reduced fiscal capacity, adverse investment climate because of infrastructure shortfalls, relatively high labour costs notwithstanding lower employment rate, and bigger concerns about future stability in the political space. Lastly, a more significant budget deficit was estimated to be 4.8 per cent of Gross Domestic Product (GDP) for the 2012/13 financial year in the 2012 Medium Term Budget Policy Statement from 4.2 per cent of GDP for the 2011/12 financial year (National Treasury 2012). However, the cost of borrowing in South African bonds remained almost 100 basis points lower than before the announcement of possible inclusion in the WGBI. This could imply that these listed domestic issues could have been well expected and included in the bond yield estimation.

However, over the past decade to date, the South African political and economic state has deteriorated significantly. The government budget deficit worsened to 5.8 per cent of GDP in 2023 (National Treasury 2023), and, it was further indicated by National Treasury (2012) that the budget deficit above 4.5

per cent of GDP is unsustainable. This has resulted in sub-investment sovereign credit ratings for South African debt, with "a clear path towards government debt stabilisation" being the main reason given by all three major credit rating agencies (Cliffe Dekker Hofmeyr 2020). Global financial volatilities also aggravate the poor economic performance in the South African/ emerging markets. According to The World Bank (2022), the effect of the war in Ukraine will compound the damage in the global macroeconomic environment caused by the COVID-19 pandemic, which might see the situation in developing economies being worse than pre-pandemic levels. This could be associated with the recovery from the stagflation of the 1970s; steep increases in interest rates in major advanced economies were required, thus triggering a string of financial crises in emerging markets and developing economies.

Due to the global crisis and domestic volatilities (i.e. political instability, continued rolling electricity load-shedding and heavy reliance of more poor-performing state-owned entities on the state for bailouts), the South African economic state continues to tumble. In trying to contain the situation, National Treasury (2023) indicated that the state continues to hand over bailouts to these state-owned entities to avoid total failures given the direct role they play in the well-functioning of the economy. Among other bailouts, the biggest one was to help the ailing state energy generator. National Treasury (2023) indicated that the state is proposing a R254 billion debt relief to Eskom over the medium term, which comprises R168 billion capital and R86 billion debt service cost. This continues to add to the already high level of debt and debt service cost faced by the South African government, thus resulting in a poor credit rating and the credit outlook for government debt stock. Based on Figure 4, it could be observed that the South African domestic debt is rated BB- by S&P and Fitch; and Ba2 by Moody's, which is further down the investment grade of BBB-/Baa3 and also significantly lower than the credit rating of BB ranked by S&P and Fitch in 1995 when the South African government stock was first rated.

The situation then was far worse, given that the South African government experienced political and financial crises due to several sanctions imposed by several international bodies (Levy 1999). The sanctions involved a ban on any form of trade, investments in the country and lending activities. It was estimated that the South African external debt was around \$24 billion by the mid-1980s, of which two-thirds was short-term (i.e. less than five years). After most lenders decided not to renew their short-term loans, South Africa ended in a liquidity crisis where the state depended on foreign lenders' willingness to refinance. The intensity of the crisis was so deep and it resulted in a significantly weaker Rand, and the state decided to close both the stock exchange and foreign exchange markets, with interest payments on the debt being suspended. This could be considered very bad compared to the current market conditions where South Africa still has access to funding. Arnold and Winning (2020) indicated that South African domestic bonds' attractiveness relative to other emerging markets peers and the depth of the South African domestic market has helped minimise the effect of the WGBI exit.

Inflation risk

It could be observed in Figure 5 that over the past decade, the South African CPI inflation rate averaged above the 4.5 per cent midpoint; however only 25.48 per cent of the time, the CPI inflation rate was above/below the SARB's 6 or 3 per cent inflation target. A lower CPI inflation rate of 2.1 per cent was realised in May 2020, which was last seen over 15 years ago in September 2004 when a CPI inflation rate of 1.3 per cent was realised. A lower CPI inflation rate might negatively affect demand for inflation-indexed bond instruments, given that interest rates already do not include the future inflation component; as such, the future value of the investment might be eroded by lower inflation accruals, making the bond instrument less attractive. Primary market auction bid-to-cover ratios support this; refer to Figure 2, which declined drastically over the COVID period and was influenced by a lower CPI inflation rate.

It could also be observed that the cost of borrowing in real terms has a somewhat antagonistic relationship with annual changes in the headline CPI inflation rate. It was observed that over 60 per cent of the time, changes in the real prime rate and CPI inflation rate moved in opposite directions for the past decade. The CPI inflation rate is seen increasing towards the end of the 2021/22 financial year, and this peaked at 7.8 per cent in July 2022, with this rate last seen 13 years ago in May 2009 when the CPI inflation rate was 8 per cent.

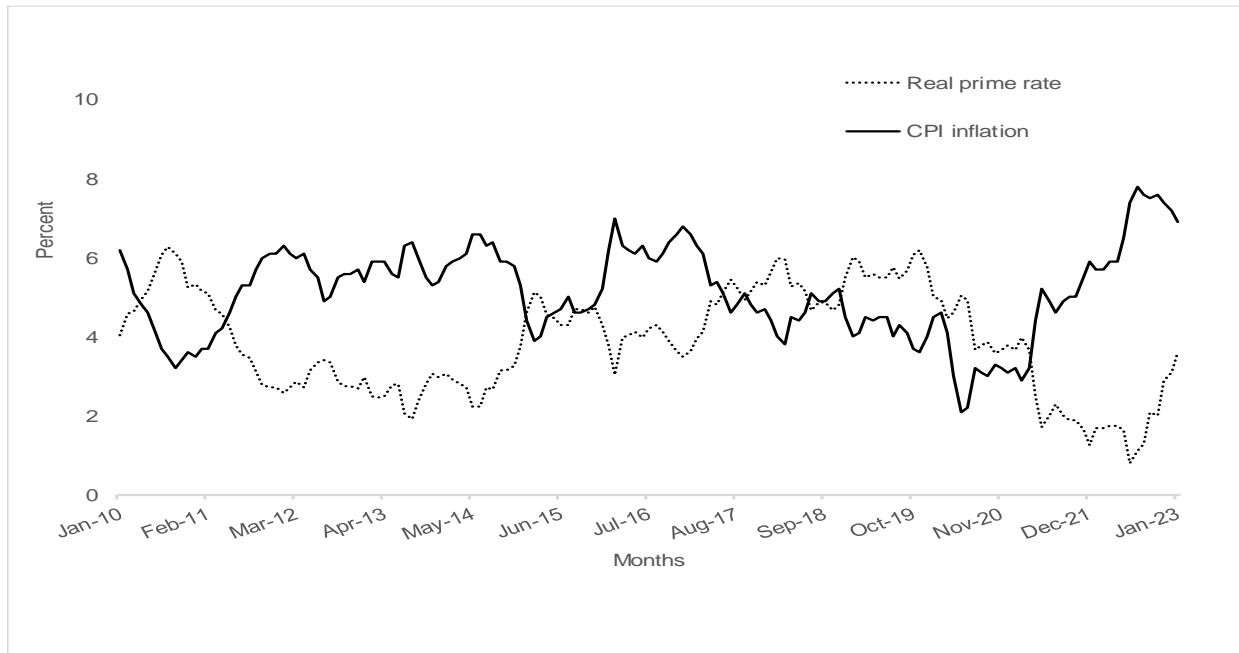


Figure 5: Relationship between CPI inflation and real prime rate in South Africa

Refinancing risk

The government maturity profile for domestic debt in Figure 6 indicates a much-clustered profile in the short-to-medium term, with an outstanding amount of at least R100 billion per year. A considerable amount is also outstanding on the Treasury bills, which must be rolled over weekly. The issue of rolling over the debt implies that even though it is not expected to redeem the amount outstanding on Treasury bills, new issuance is made every week to redeem the outstanding portion and also raise funds for cash management purposes. The ability to raise cash every week to meet these responsibilities adds to the already pressurised government's ability to raise cash every week to fund the increasing budget deficit and also build cash reserves for bonds maturing in the short term.

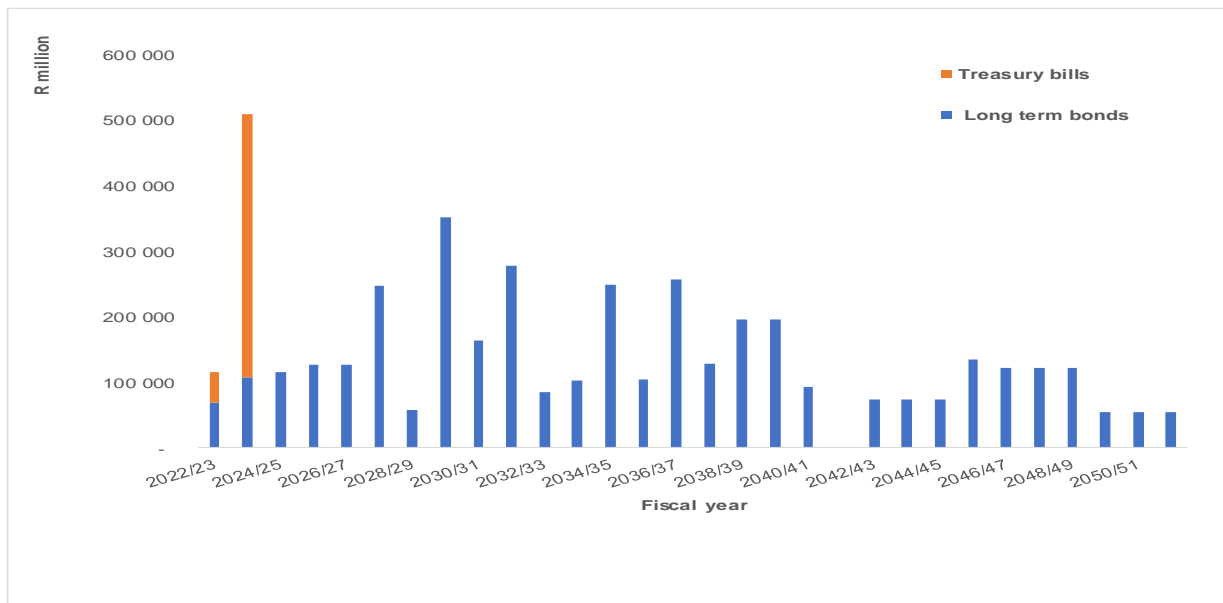


Figure 6: South African government domestic debt profile

South African government is projecting bond redemptions of above R100 billion in the medium term for every fiscal year. This is relatively higher than the average fiscal year bond redemptions of R60 billion realised in the previous fiscal years (National Treasury 2021). This brings the issue of bond switches to minimise the risk of being unable to meet financial obligations in a particular fiscal year. Bond switches phenomena/programme is defined as a transaction of exchanging a series of existing source bonds held by

investors with a series of selected destination bonds where both source and destination bonds have to be determined by bond issuers. According to National Treasury (2000), this phenomenon was introduced in the South African market in early 2000 when the South African government faced declining borrowing requirements and reduced the number of new bond issues. The switch programme was introduced to manage liquidity by repurchasing in advance, less-liquid maturities while financing these bond purchases through more significant new issuances into the benchmark bonds.

The switch programme gives the bond issuer an advantage of rapidly restructuring the maturity profile of outstanding debt. The refinancing issue is not entirely addressed when switches are done to minimise the government's redemption obligations in the short term; however, it is transferred to longer maturities. Given the highly clustered South African government debt maturity profile in Figure 6 and the growing primary deficit, the issue of a switch programme will always be needed to minimise the eminent pressure in the short term for the government's ability to meet other fiscal policy needs. However, the switch programme might not always be feasible as it depends on the willingness of the bondholders to switch maturities, which might not always favour their investment plans. This implies that the switch programme will remain costly for the government.

CONCLUSION

Different economic and monetary policy regimes characterise the period under review. The effect of the COVID-19 pandemic on the country's economic and social aspects necessitated increased borrowing requirements and some measures from monetary policy to help the government borrowing plans, which were faced with increased liquidity issues. In March 2020, South Africa was downgraded to sub-investment grade by Moody's, the third most prominent credit rating agency, to grade South African sovereign bonds on junk/sub-investment grade following Standard and Poor and Fitch rating agencies in 2017. Current domestic political volatilities and worsening debt levels fuelled by the growing budget deficit and poor economic conditions remained the most significant drivers for this decision. This resulted in a dire situation where South African bonds were excluded from the WGBI, and foreign investors sell-off of government bonds amounting to R3.2 billion a month after the exclusion (Arnold and Winning 2020). However, this was a long waited decision and has long been priced in the bond prices and further clouded by the effect of the COVID-19 crisis. As a result of the COVID-19 pandemic, the global economy was shut down from trading, and emerging markets realised further sell-off from most foreign investors as they looked for safer markets. Further, to address the social impact of the continued shutdowns in the country, the South African government made fiscal adjustments to minimise the impact on livelihood. This has further aggravated the poor position of the South African government's funding/borrowing levels while faced with liquidity issues driven by the WGBI exit and the COVID-19 crisis. South African government resorted to tapping on available resources for cash management purposes in line with (International Monetary Fund 2020) guidelines [i.e. drawing down its cash deposits held with the Reserve Bank, increased short-term funding (Treasury bills and bridging finance from the Corporation for Public Deposits) and receiving loans from international financial institutions]. The South African Reserve Bank also helped manage liquidity issues by buying government stock. This has helped in reducing the cost of borrowing by almost 200 and 350 basis points on inflation-indexed bonds and fixed-rate/nominal bonds, respectively, during the peak of COVID-19 stress around March/April 2020; and further boosted primary market bond auction's bids from 1.7 to 4.31 and 2.25 to 4.24 for both inflation-indexed bonds and fixed-rate/nominal bonds, respectively. Even though the South African debt seems to be well managed from a risk management perspective, it is noted that the quantum of debt has increased drastically, and this might be masking the bigger picture. Short-term refinancing pressure remains, thus putting the country at the mercy of investors for funding and further shifting the eminent refinancing obligations to the long term.

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