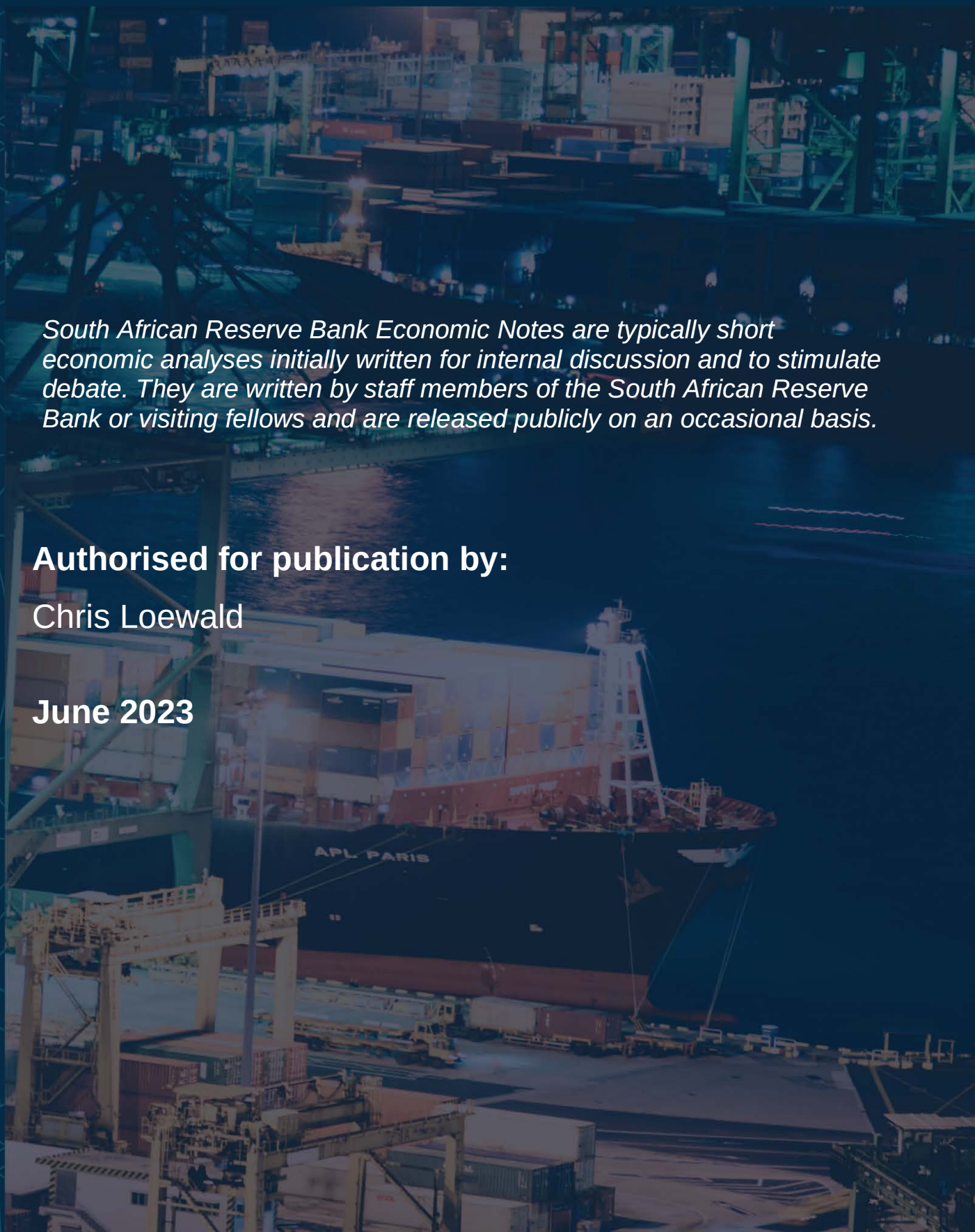
South African Reserve Bank
Occasional Bulletin of Economic Notes
OBEN/23/01

SOUTH AFRICAN RESERVE BANK



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Authorised for publication by:

Chris Loewald

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Table of Contents

Contents

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Drivers of corporate credit in South Africa

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Abstract

Corporate credit growth remains strong despite tighter monetary policy and deteriorating global and domestic conditions. Current drivers of corporate credit, particularly general loans and advances, are normalising to pre-COVID levels as the need for working capital has increased, investment has picked up in particular sectors of the economy such as agriculture and passthrough from monetary policy actions has been limited. A simple econometric model suggests that investment is a major driver of corporate credit growth in the long-run, while lending spreads and government borrowing rates are important determinants in the short-run.

1. Introduction

Despite recent policy rate increases, corporate credit continues to grow. The recovery follows the large contraction in 2020, following the lockdown of the domestic economy. In this note, we review some of the recent trends in corporate credit and identify possible drivers, using a simple econometric model. Our focus is on loans and advances, which is the largest component of corporate credit, and excludes investments and discounted bills.

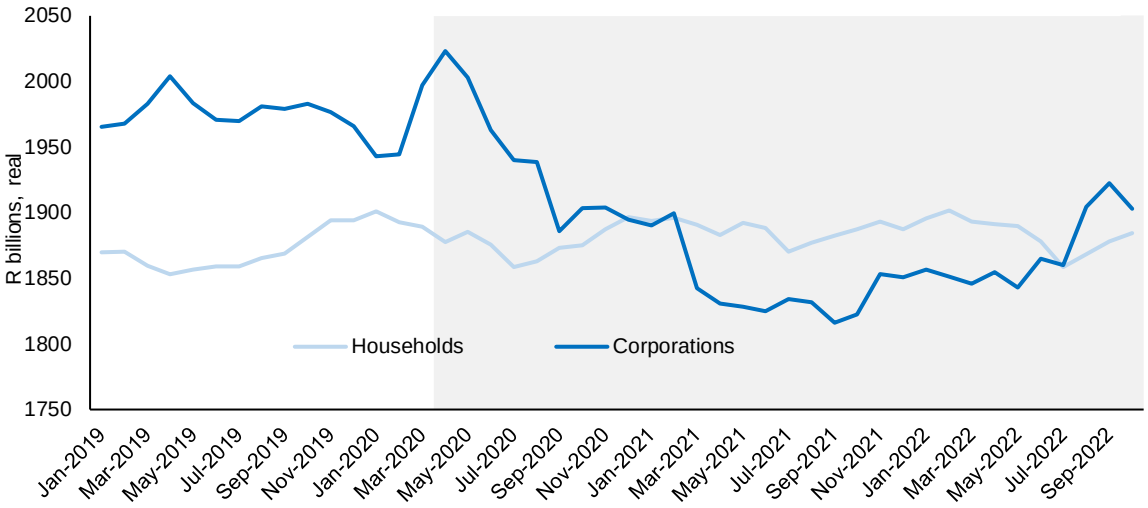
The literature identifies several macro- and microeconomic drivers of corporate credit. Macro factors include, for example, economic growth, policy rates, asset price changes, external deficits, and the type of exchange rate management framework (Mendoza and Terrones, 2008). Higher fiscal deficits or generally unsustainable government finances can increase borrowing costs throughout the economy, reducing credit extension (Hollander 2021). Micro factors are firm and sector specifics. They can include, for example, firm-level leverage measures and firm values. Micro-prudential and macroprudential actions can also reduce credit extension if it is costly for banks to increase capital (de Jager, Ehlers et al. 2021). The numerous drivers of corporate credit hinder the precise estimation of what drives credit growth at specific points in time.

2. Trends in corporate credit

Table 2 in the appendix, shows the recent trends in corporate credit extension. Corporate credit is recording stronger growth rates across the different subcategories. The largest category of general loans and advances recorded nominal growth of 12.2% in 2022 (5.0% inflation-adjusted). This subcategory has been the most volatile over the COVID period. It recorded the largest contraction in 2020 and it is also recording the strongest recovery (it exhibited similar behaviour in 2009 during the Global Financial Crisis).

However, in real terms the stock of corporate credit remains below its 2019 level after a significant drop during 2020 and at the beginning of 2021 as corporates reduced debt exposure (Figure 1). The stock levels of household credit remained more stable over this period. This suggests that a major driver of corporate credit growth is simply normalisation as economic growth recovers post-crisis.

Figure 1: Real loans and advances to corporates and households (deflated with CPI)



Source: SARB (2022)

The recovery in corporate credit is broad-based across sectors of the economy and financial institutions. Figure 2 shows the recovery in corporate credit extension across the major lending banks. Growth has been strong, particularly for ABSA, followed by FirstRand. Nedbank's slower recovery relative to other banks reflects a more selective credit origination strategy, particularly in areas such as commercial property and vehicle finance.[1]

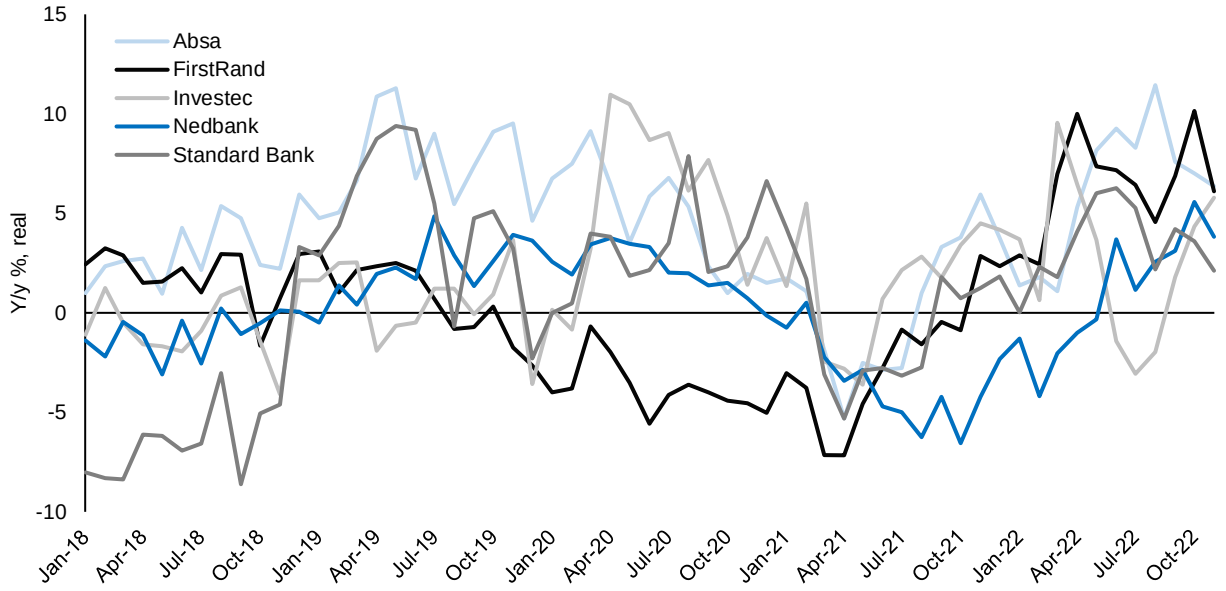
Growth in credit extension to primary sectors such as agriculture is recording growth rates of over 10% (Figure 3). This is driven by some sector specific factors such as the particular timing of the planting season (during which borrowing typically picks up for the agricultural sector). In the mining sector, borrowing activity has been attributed in part to smelter upgrades and rebuilds. Although actual production remains subdued, elevated commodity prices have supported activity in the sector generally, such that most of the sector's borrowing is likely based on working capital needs. Investment in renewable electricity generation is likely contributing to the recovery in credit extension to the electricity sector. A long-running decline in construction activity explains the declining trend in the sector's borrowing. Paired with weak investment in residential and non-residential building, this also explains declining credit extension to the real estate sector. [2] Identifying the exact drivers is difficult.

[1] The sharp dip for Investec in 2022 reflects reduced property acquisitions.

[2] The large spike in 2020 in credit extension to 'financial intermediation and insurance' is likely largely due to the purchase of Tiger brands by PepsiCo.

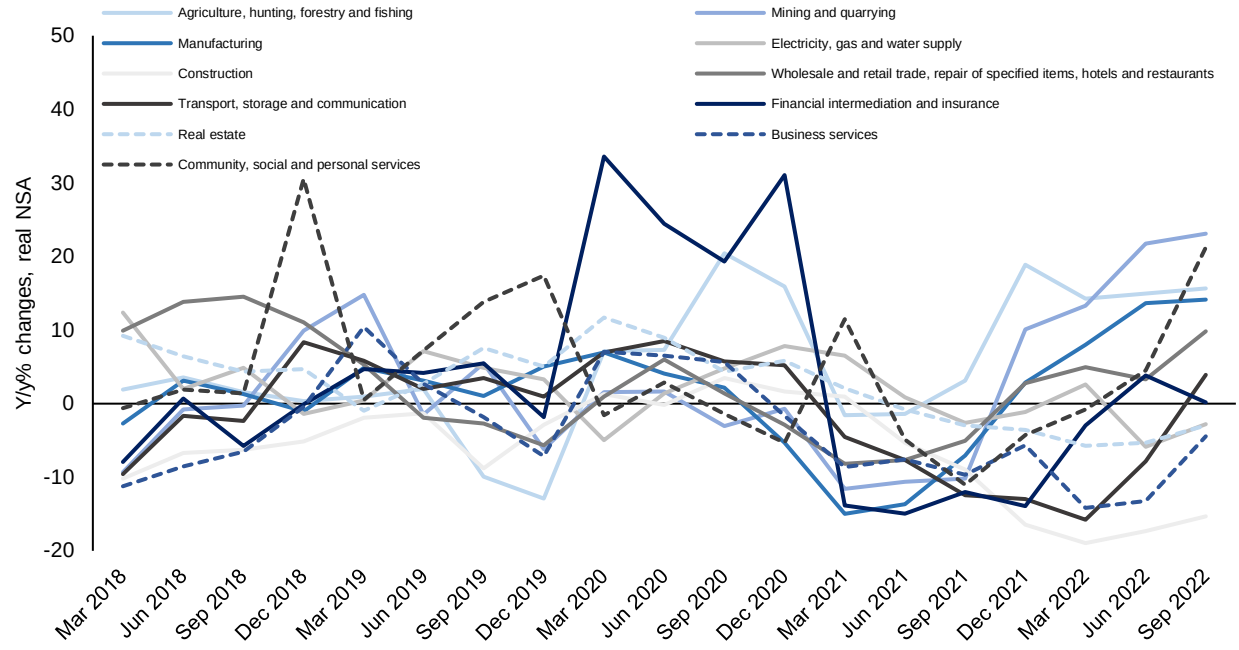
The disaggregation does not allow us to distinguish between credit extension for working capital[3] as opposed to investment. These often have different drivers, with investment being more sensitive to future expectations of economic activity. There is also a variety of idiosyncratic factors specific to some sectors (and firms) contributing to credit extension.

Figure 2: Total credit exposure by major bank (deflated with CPI)



Source: SARB (2023)[4]

Figure 3: Total credit extension by sector



Source: SARB (2023)

3 This could include bridging finance ahead of a planned share listing, larger scale purchases of inputs, motivated by a time-sensitive pricing advantage, or longer-cycle processes (e.g. planting season for agriculture), and even covering fixed costs in some months based on revenue shortfalls.

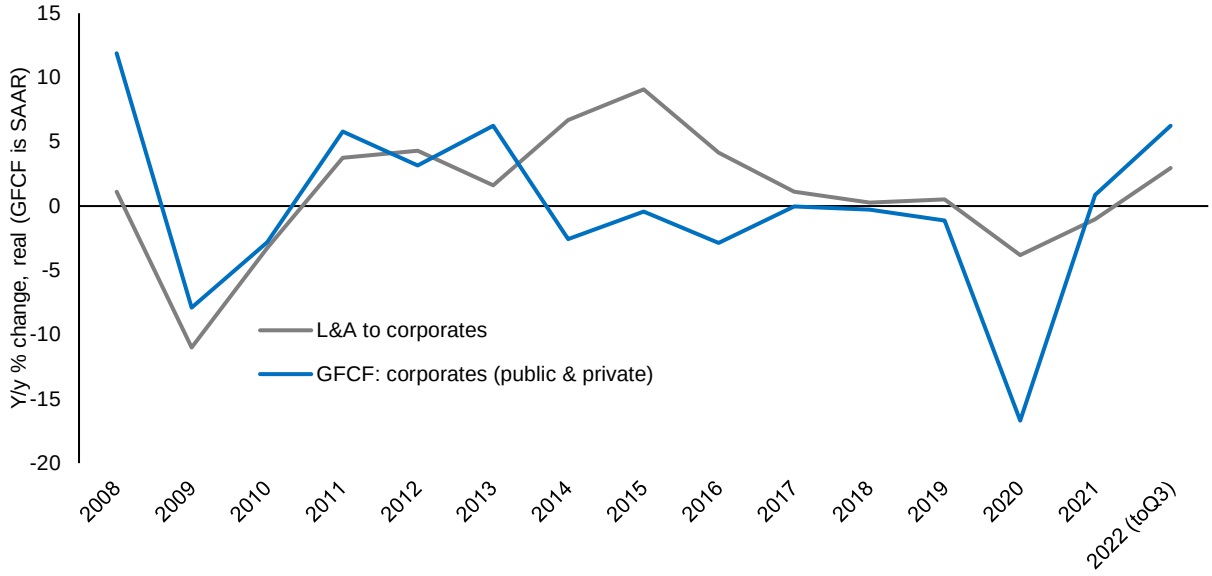
4 As this BA900 data does not differentiate between exposure to households or corporates, this chart does not depict corporate credit exclusively. Also, for Figure 3, which additionally does not refer exclusively to bank-borrowing.

3. Macroeconomic drivers

In this section, we review some of the macroeconomic drivers. We provide some descriptive analysis followed by the estimation of a simple econometric model. Our focus is on corporate investment, borrowing costs measured by the weighted average lending rate to corporates, business confidence, exchange rate (rand-dollar), the risk environment (EMBI), and the stock market (JSE ALSI). [5]

Firms also borrow to fund investment. Figure 4 plots the growth in investment against growth in general loans and advances. The two series generally co-move suggesting that higher investment may explain a portion of general loans and advances, despite multiple sources to fund investment, and the use of general loans and advances for working capital.

Figure 4: Corporate investment and general loans and advances (y-o-y % change)

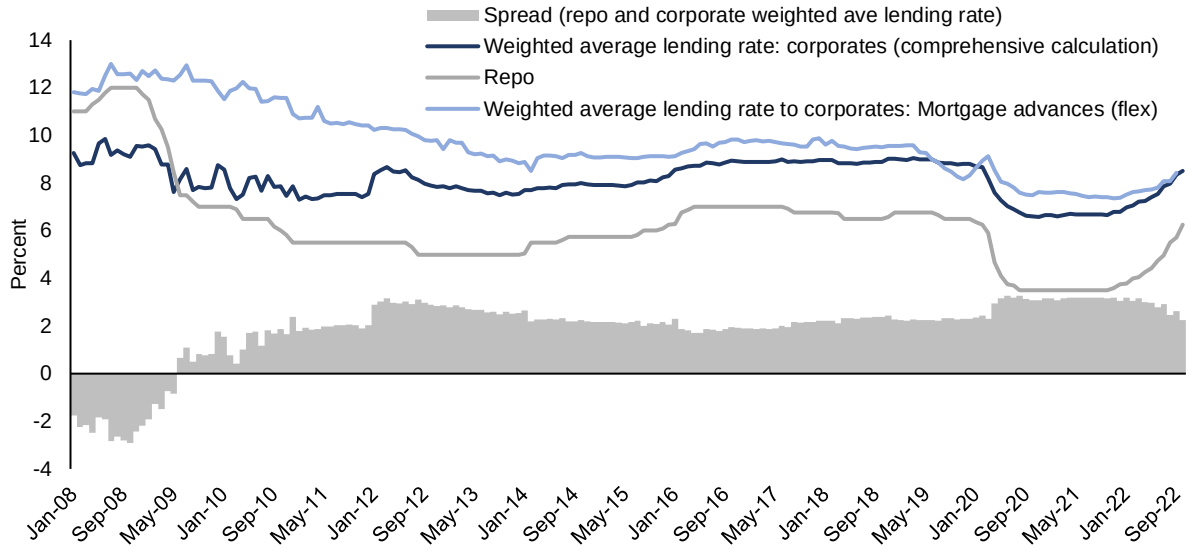


Source: SARB (2022)

Cost of borrowing should also be an important driver of credit extension. The monetary policy rate has increased by 375 basis points since November 2021 and yet credit extension has continued to grow. This raises questions about policy rate passthrough. Figure 5 shows that a decline in the lending spread has offset some of the impact of higher repo rate increases. Over the period February-to-October 2020[6], the lending spread declined by just over 50 basis points. The spread dynamics are in line with the economic literature with periods of significant risk aversion and economic slowdown associated with larger lending spreads (Borio and Zhu 2012). The change in the monetary policy implementation framework may have also contributed to lower passthrough. The spread between repo and JIBAR has declined marginally since the implementation of the new framework.

[5] A description of the data can be found in Table 3.
[6] Based on the difference between the installment sale lending rate and the repo rate.

Figure 5: Lending rates and spread of corporate weighted average rate to repo

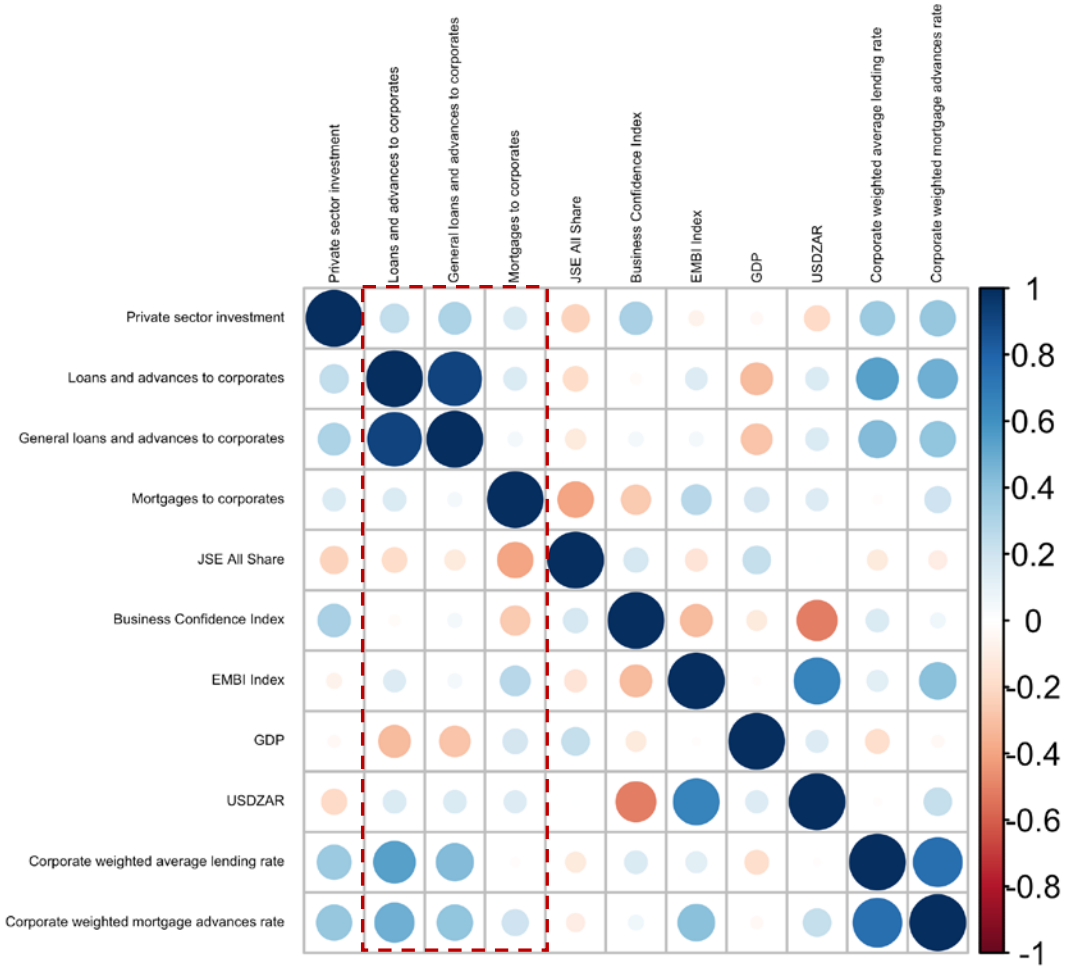


Source: SARB (2022)

Figure 6 provides correlation coefficients of aggregate differenced corporate loans and its components (general loans and advances, and mortgages), and the drivers (stationary series[7]). Aggregate and general corporate loans correlate positively with private sector investment. Surprisingly, measures of borrowing costs are also positively correlated. The remaining drivers appear to be weakly correlated.

[7] After differencing all the variables were stationary. Normalising is a variance reduction strategy which removes the effect of scale on correlation estimation.

Figure 6: Differenced correlations between corporate credit and potential drivers



Note: Perforated lines indicate credit driver correlations.

Next, we use a simple econometric model to identify the relationship between drivers and subcategories of corporate credit extension. We use a single dynamic regression equation following an approach proposed by Wickens and Breusch (1988). This approach produces similar results to the Engle and Granger two-step method. It involves simultaneous estimation of the long- and short-term parameters and is based on an unrestricted error correction autoregressive distributed lag model, or ARDL(p,q).

Our preliminary analysis suggests that investment and general loans and advances are cointegrated, hence this type of model is appropriate. We tested a variety of specifications using the drivers identified previously. We were not able to identify a significant relationship between general loans and advances and the EMBI index, Business Confidence, JSE All share index and the exchange rate, confirming the results from the corelation analysis.[8] The

[8] The framework does not allow for all the drivers to be tested simultaneously as this violates statistical requirements to ensure that the estimated coefficients are accurate. For example, the exchange rate is highly correlated with the Business Confidence and the EMBI index.

best fit equation specification is presented in Table 1.[9] Our specification does not have restrictions, which is intentional as we want our results to be more data-driven.

Table 1: Estimation results

	Dependent variable	
Explanatory variables	General loans and advances (real)	Instalment sales (real)
Adjustment coefficient	-0.024	-0.044
Total real investment	0.210	0.216
t-statistic	*4.913*	5.151
long-run elasticity	**8.605**	**4.879**
Short-term drivers		
Lending spread	-2.036	-1.352
t-statistic	*-3.064*	-1.958
Real private investment	0.078	0.080
t-statistic	*2.426*	2.425
Real long-term government bond yield	-0.520	0.062
t-statistic	*-1.908*	0.211
DUM2009Q2	-0.013	0.002
t-statistic	*-1.056*	0.211
DUM2012Q2	0.032	0.002
t-statistic	*2.320*	0.189
R-squared	0.688	0.630

The results show a strong cointegrating relationship between investment and general loans and advances. A percentage point increase in total investment increases real general loans and advances by 8 percentage points in the long-run. The low adjustment coefficient indicates that it takes a while for general loans and advances to reach the new equilibrium level.

The short-term drivers are the lending spread between the weighted average lending rate and the repo rate, real private investment, the real bond yield on long bonds and a set of dummy variables. All coefficients are significant.

[9] The Eviews estimation results are presented in appendix. We also present an estimated equation for mortgage advances using the same drivers. None of the drivers is significant highlighting that different components of corporate credit extension have different drivers.

Unlike the preliminary correlation analysis, in the econometric estimation, borrowing rates have strong negative relationship with general loans and advances. A percentage point increase in the lending spread, reduces lending instantaneously by 2 percentage points. Changes in the spread can be due to a variety of reasons, including higher risk aversion by banks due to rising fiscal or economic risks or macroprudential actions.[10] For example, de Jager, Ehlers et al. (2021) find the capital adequacy ratio to be an important determinant of overall credit extension. Over the estimation period, BASEL III was introduced, and banks were faced with significant domestic risks, which supports a strong negative relationship between the spread and growth in general loans and advances.

Another important determinant is real government long-term bond yields. There is a link between fiscal policy and corporate credit extension. Fiscal actions, which increase risk premia and long bond yields also reduce general loans and advances.

Finally measures of borrowing costs seem to be weightier drivers of credit extension in the short-run than private investment. While the coefficient is positive and significant as expected, it is very small. Our R-squared measures suggest that a large part of the variation remains unexplained by our model, highlighting the importance of idiosyncratic factors that drive credit extension at specific points in time.

We use the same specification for instalment sales. Investment and lending spreads remain important drivers, but the coefficients are smaller. Government bond yields are no longer a significant driver. Different components of corporate credit extension have different drivers. In the appendix, we show the estimation for mortgage advances using the same explanatory variables and none are significant.

4. Conclusion

The note shows that the recovery in corporate credit is driven by a variety of factors, including working capital and investment needs. This has also been the feedback from South African banks in response to questions about the pickup in the general subcategory.

Our simple econometric model indicates that in the long-run, total investment is an important determinant of credit extension. In the short-run, however, the lending spread and government long bond yields are important drivers. The lending spread is an indicator of rising domestic risk and increased risk aversion by commercial banks.

Identifying the specific drivers at any point is difficult. This is clearly illustrated by the flow of funds data, which shows the supply and use of funds by corporates. Corporate decisions to borrow are driven by investment and savings behaviour but also by decisions around accumulation of assets and liabilities and the type of instruments used to fund various company activities.

[10] See for example Makrelov, K., et al. (2021). "The impact of higher leverage ratios on the South African economy." Studies in Economics and Econometrics 45(3): 184-207.

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Appendix A

Table 2: Corporate credit extension

		Annual change (R billions, nominal)					Portion of total (%)
		2018	2019	2020	2021	2022	2022
Instalment sale and leasing finance	R119.5	9.2	13.9	-1.1	5.6	17.1	8.6
Mortgage advances	R439.8	26.9	37.8	28.8	11.0	30.2	15.1
Overdrafts	R171.2	19.3	-2.2	-30.3	24.2	30.6	15.3
General loans	R931.9	23.9	30.5	-7.5	20.3	120.5	60.4
Credit card advances	R7.4	0.6	-0.2	-2.1	1.1	1.1	0.5
Total loans and advances to corporate sector	R1679.6	79.9	79.8	-12.1	62.2	199.4	100.0

Source: SARB (2022)

Table 3: Data sources

	Data	Measure	Source
Corporate borrowing	Loans and advances to corporates	Nominal	South African Reserve Bank
	General loans and advances to corporates	Nominal	South African Reserve Bank
	Mortgages to corporates	Nominal	South African Reserve Bank
Demand factors	GDP	Nominal	Statistics South Africa
	Private sector investment	Nominal	Statistics South Africa
	Corporate weighted average lending rate	Nominal rate	South Africa Reserve Bank
	Corporate weighted mortgage advances rate	Nominal rate	South Africa Reserve Bank
Macroeconomic conditions	Business confidence	Index	First National Bank
	JSE All share	Index	Johannesburg Stock Exchange
	USDZAR	Nominal rate	South African Reserve Bank
Macroeconomic vulnerabilities	EMBI	Index	South African Reserve Bank

Appendix B

Table 4: Eviews estimation results: General loans and advances

Dependent Variable: DLOG(@MOVAV((GENERALLA/CPI),4))
Method: Least Squares
Date: 01/31/23 Time: 14:26
Sample (adjusted): 2008Q3 2019Q4
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(@MOVAV(GENERALLA(-1)/CPI(-1),4))	-0.024388	0.009029	-2.701254	0.0103
LOG(I1(-1))	0.209869	0.042719	4.912836	0.0000
C	-2.317682	0.499794	-4.637274	0.0000
D(RLENDINGCORP(-1)-REPO1(-1))/100	-2.035856	0.664385	-3.064273	0.0040
DLOG(IP/CPI)	0.078162	0.032215	2.426234	0.0201
D(GOVBOND-@PCY(CPI))/100	-0.520062	0.272612	-1.907699	0.0640
DUM2009Q2	-0.013299	0.012588	-1.056455	0.2974
DUM2012Q2	0.032354	0.013945	2.320144	0.0258

R-squared	0.688053	Mean dependent var	0.009940
Adjusted R-squared	0.630589	S.D. dependent var	0.018303
S.E. of regression	0.011125	Akaike info criterion	-6.002559
Sum squared resid	0.004703	Schwarz criterion	-5.684535
Log likelihood	146.0589	Hannan-Quinn criter.	-5.883425
F-statistic	11.97364	Durbin-Watson stat	1.590252
Prob(F-statistic)	0.000000		

Table 5: Eviews estimation results: Instalment Sales

Dependent Variable: DLOG(@MOVAV((INSTSALES/CPI),4))
Method: Least Squares
Date: 01/20/23 Time: 16:21
Sample (adjusted): 2008Q3 2019Q4
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(@MOVAV(INSTSALES(-1)/CPI(-1),4))	-0.044311	0.023307	-1.901145	0.0649
LOG(I1(-1))	0.216202	0.041971	5.151187	0.0000
C	-2.309394	0.525723	-4.392793	0.0001
D(RLENDINGCORP(-1)-REPO1(-1))	-0.013522	0.006906	-1.957924	0.0576
DLOG(IP/CPI)	0.079576	0.032819	2.424734	0.0202
D(GOVBOND-@PCY(CPI))	0.000621	0.002946	0.210748	0.8342
DUM2009Q2	0.002487	0.013137	0.189306	0.8509
DUM2012Q2	0.021770	0.015072	1.444433	0.1568

R-squared	0.629717	Mean dependent var	-0.002321
Adjusted R-squared	0.561506	S.D. dependent var	0.017340
S.E. of regression	0.011483	Akaike info criterion	-5.939210
Sum squared resid	0.005010	Schwarz criterion	-5.621185
Log likelihood	144.6018	Hannan-Quinn criter.	-5.820076
F-statistic	9.232010	Durbin-Watson stat	0.801412
Prob(F-statistic)	0.000001		

Table 6: Eviews estimation results: Mortgage advances (corporate)

Dependent Variable: DLOG(@MOVAV((MORTGAGEADVANCE/CPI),4))
Method: Least Squares
Date: 01/20/23 Time: 16:24
Sample (adjusted): 2008Q3 2019Q4
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(@MOVAV(MORTGAGEADVANCE(-1)/CPI(-1),4))	0.016078	0.040621	0.395797	0.6945
LOG(I1(-1))	0.059885	0.038460	1.557083	0.1277
C	-0.864235	0.724584	-1.192732	0.2404
D(RLENDINGCORPMORG(-1)-REPO1(-1))	0.012910	0.006066	2.128161	0.0399
DLOG(IP/CPI)	0.005754	0.029268	0.196612	0.8452
D(GOVBOND-@PCY(CPI))	0.002813	0.002310	1.217638	0.2309
DUM2009Q2	0.009091	0.010269	0.885325	0.3815
DUM2012Q2	-0.002314	0.010179	-0.227352	0.8214

R-squared	0.253180	Mean dependent var	0.000770
Adjusted R-squared	0.115608	S.D. dependent var	0.010417
S.E. of regression	0.009796	Akaike info criterion	-6.256900
Sum squared resid	0.003647	Schwarz criterion	-5.938876
Log likelihood	151.9087	Hannan-Quinn criter.	-6.137767
F-statistic	1.840342	Durbin-Watson stat	0.687071
Prob(F-statistic)	0.107612		