MUNICIPAL BORROWING BULLETIN

ISSUE 6
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Molepo Water Treatment Works: Polokwane Local Municipality

PURPOSE

The Municipal Borrowing Bulletin updates stakeholders and interested parties on developments in the municipal borrowing market. It contributes to a better understanding of movements and trends in municipal borrowing through data sharing, analysis, and discussion of topical issues relating to municipal borrowing. The main aim of the bulletin is to promote transparency, accountability, and the prudent and responsible use of municipal borrowing for infrastructure finance.

The Bulletin is published on a quarterly basis. This sixth edition covers information up to 30 June 2017, corresponding to the fourth quarter of the 2016/17 municipal financial year. Sources of data used in this Bulletin include data submitted by municipalities to National Treasury as required by Sections 71 and 74 of the Municipal Finance Management Act of 2003; data obtained from lenders; information published by the South African Reserve Bank (SARB); and data from the Johannesburg Stock Exchange (JSE) sourced from STRATE.

HIGHLIGHTS

- According to data reported by municipalities, the aggregate outstanding long term debt at the end of the financial year has increased by 2 percent since the previous financial year; however, this is at odds with the lender side data which reflects a decrease of 14.5 percent.
- Based on the reporting by both municipalities and lenders, there is a R2.3 billion difference not accounted for by lenders. Differences in data between the two stakeholder groups is often identified year-on-year however, this may be attributed and not limited to the conflicting accounting periods between the borrowers and the lenders.
- The long term debt portfolio held by commercial banks has declined by 28.3 percent since the fourth quarter of the 2015/16 municipal financial year – a significant decrease in the private sector portfolio.
- The use of new borrowing to finance municipal capital expenditures has continued to decline as a proportion of total

national treasury
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REPUBLIC OF SOUTH AFRICA

2030 NDP

capital finance, with the share of new borrowing as a percentage of capital expenditure declining from a high of 24 percent in 2008/09 to a low of 15 percent in 2016/17.

- Municipalities have managed to take up only 69.8 percent of the adjusted budget for borrowing.

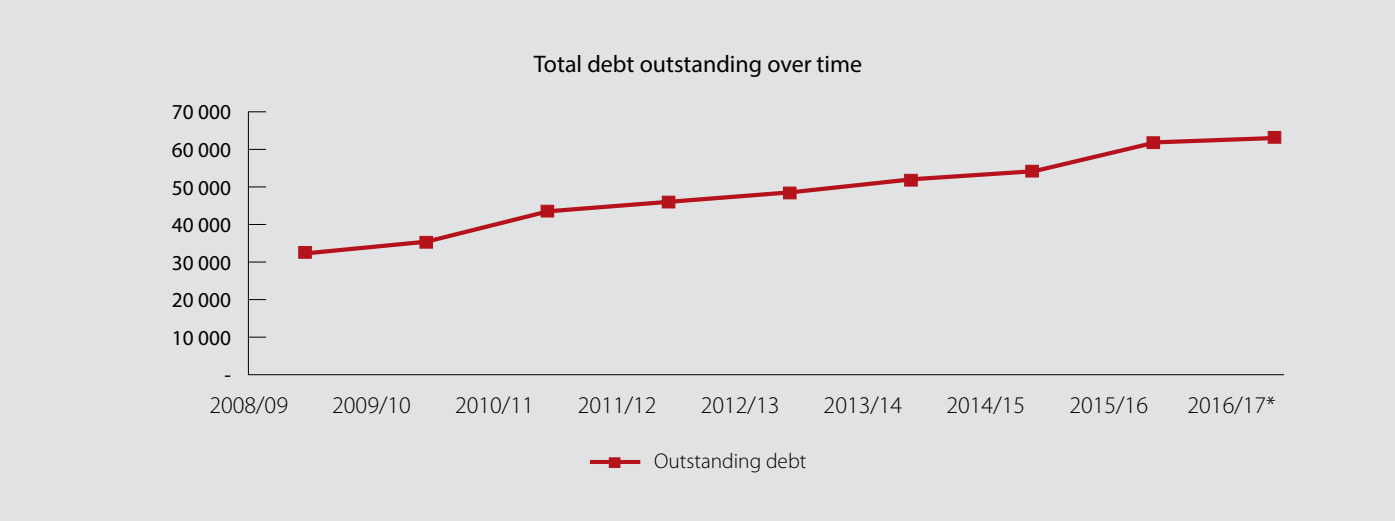
DATA AND ANALYSIS

1. ANALYSIS OF LONG TERM DEBT AS REPORTED BY MUNICIPALITIES

At the end of the 2016/17 municipal financial year, a total of 163 municipalities reported their borrowings, including all metros and secondary cities. Of these, 78 reported that they hold outstanding long term debt, while 85 reported that they do not. Most of these are smaller municipalities who largely rely on national government for funding, struggle to raise own revenues and manage available resources and as a result, are not creditworthy. A total of 94 smaller municipalities failed to submit timely reports for the fourth quarter. As a result, the outstanding borrowing reported may be slightly understated.

Aggregate adjusted municipal budgets showed planned borrowing in the 2016/17 financial year at R11.6 billion. Of this, only R8.1 billion was taken up by the end of the financial year. Figure 1 below shows the total debt outstanding over 9 years from 2008/09 financial year to 2016/17 financial year. Outstanding long term debt has increased by 92 percent, from R32.4 billion in 2008/09 to R62 billion in 2016/17.

Figure 1: Total debt outstanding as reported by municipalities



Source: National Treasury Database

In contrast, the share of new borrowing as a percentage of capital expenditure declined from a high of 24 percent in 2008/09 to a low of 15 percent in 2016/17 as shown in Table 1 below. This indicates that collectively, despite a rise in total capital expenditures, municipalities are proportionately less dependent on borrowing to finance their investment programmes.

Table 1: Capital expenditure, new borrowing and outstanding debt

R million	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Capital expenditure	39 577	39 625	30 945	33 239	41 679	47 932	53 241	54 682	54 411
New Borrowing	9 463	8 226	6 401	6 211	6 490	7 583	9 357	9 222	8 099
New borrowing as a % of CAPEX	24%	21%	21%	19%	16%	16%	18%	17%	15%
Outstanding debt	32 366	35 388	43 190	45 640	48 078	51 431	53 493	60 903	62 043

Source: National Treasury Database

Table 1 shows actual capital expenditure, new borrowing and the total outstanding debt for all municipalities through to the end of fourth quarter of 2016/17 financial year. In the latest FY, municipalities incurred capital expenditure amounting to R54.4 billion of which R8.1 billion or 15 percent was funded through new long term borrowing. The capital expenditure amount represents a slight decline by 0.5 percent when compared to the previous financial year. Similarly, total new borrowing raised during the period has decreased by 12.2 percent when compared to the previous year, from R9.2 billion in 2015/16 to R8.1 billion in 2016/17. Taking into account the new borrowings and debt redemptions during FY 2016/17, total outstanding long term debt as reported by municipalities has increased by 1.9 percent from R60.9 billion in 2015/16 to R62.0 billion in 2016/17.

Table 2: Outstanding long term debt as at 30 June 2017

Municipal Category	Municipality	Total debt Q4 2016/17 R'000	Share of total debt	Actual revenue 2016/17* R'000	Debt to revenue ratio
A	BUF	445 768	1%	5 695 174	8%
	NMA	1 318 032	2%	8 436 433	16%
	MAN	1 150 611	2%	5 682 226	20%
	EKU	5 050 855	8%	31 802 534	16%
	JHB	20 103 896	32%	42 148 551	48%
	TSH	11 312 131	18%	28 967 387	39%
	ETH	8 835 985	14%	30 226 889	29%
	CPT	6 219 207	10%	35 083 231	18%
	Total Metros	**54 436 485**	**88%**	**188 042 425**	**29%**
B	Other municipalities	6 985 287	11%	101 418 830	7%
C	Districts	621 468	1%	15 496 108	4%
	Total all municipalities	**62 043 240**		**304 957 363**	**20%**

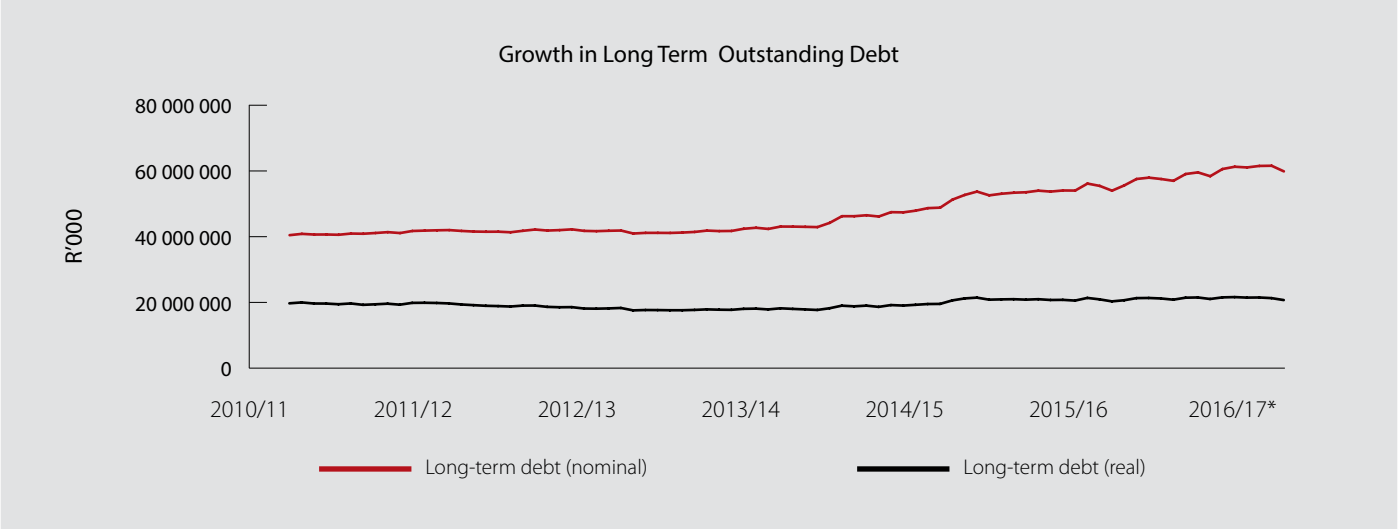
**excluding capital transfers*
Source: National Treasury Database

Table 2 above shows the share of long term debt as reported in the fourth quarter of the 2016/17 financial year by municipalities. The City of Johannesburg remains the largest borrower with outstanding long term debt amounting to R20.1 billion or 32 percent of the total outstanding debt for all municipalities. The average debt to revenue ratio for metros amounted to 29 percent, which remained the same when compared to the previous quarter of 2016/17. Correspondingly, the average debt to revenue ratio for all municipalities is standing at 20 percent.

The City of Johannesburg remains with the highest debt to revenue ratio at 48 percent, followed by the City of Tshwane and eThekwini municipality with 39 percent and 29 percent respectively. Although the debt to revenue ratio for the City of Johannesburg is outside the gearing ratio of 45 percent recommended by National Treasury, the annual debt service for FY 2016/17 amounted to R2.1 billion which is only 5 percent of actual revenue highlighting their relatively restrained debt management strategy. Prudent borrowing with a specific focus on strategic investment that will unlock additional revenues for the municipalities is continuously encouraged.

2. ANALYSIS OF LONG TERM DEBT AS REPORTED BY LENDERS

Figure 2: Growth in long term municipal borrowing

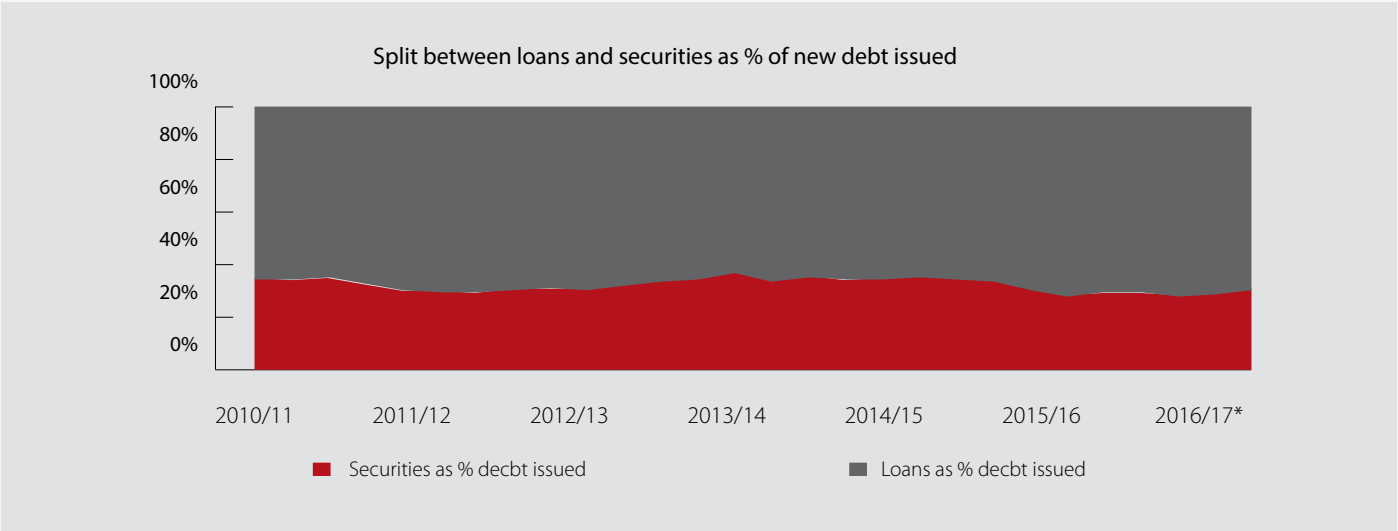


**Incl. Q I-IV*
Sources: Banks, DBSA, INCA, DFIs, STRATE, SARB

Figure 2 above shows a 7 year trend in outstanding long-term debt between FY 2010/11 and FY 2016/17. At the end of the 2016/17 municipal financial year, lenders reported nominal long term debt of R59.7 billion demonstrating a slight decline by R3.1 billion or 4.9 percent when compared to the 2015/16 municipal financial year.

When analysing quarter to quarter performance for FY 2016/17, the real debt reflects a decline of R1.3 billion or 6.8 percent from R20.5 billion in the third quarter to R19.1 billion in the fourth quarter reflecting the effects of an increase in inflation during that period.

Figure 3: Split between debt instruments issued by municipalities over time

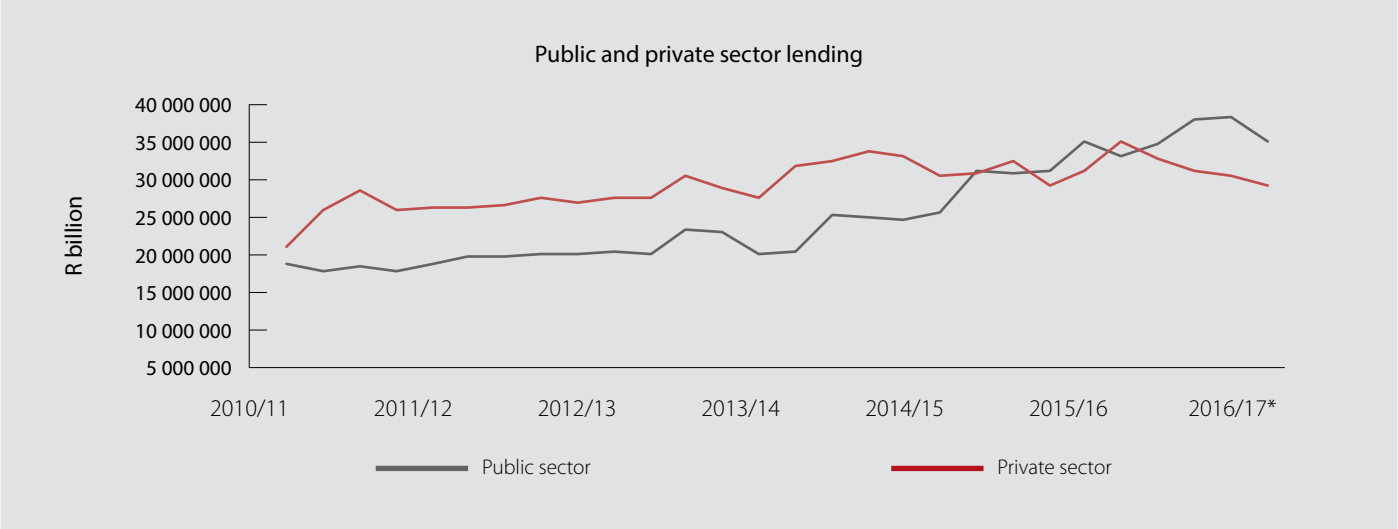


** incl. Q I-IV*
Source: Banks, DBSA , INCA, DFI's, STRATE, SARB

Figure 3 above shows the share of outstanding municipal long term debt between loans and securities (which are mostly dominated by bonds). At the end of the of FY 2016/17, lenders reported outstanding long term loans amounting to R41.4 billion, a decline by R2.3 billion or 5.3 percent when compared to the previous financial year. Similarly, outstanding long term securities were reported to be R18.3 billion which has declined by R347 million or 2.1 percent when benchmarked against FY 2015/16. Considering at the shorter term change, the share of long term loans in total municipal long term debt has decreased by 2 percent when compared to the third quarter of FY 2016/17, meanwhile securities have dropped by just R90.3 million or 0.5 percent for the same period.

3. HOLDERS OF MUNICIPAL LOANS AND BONDS

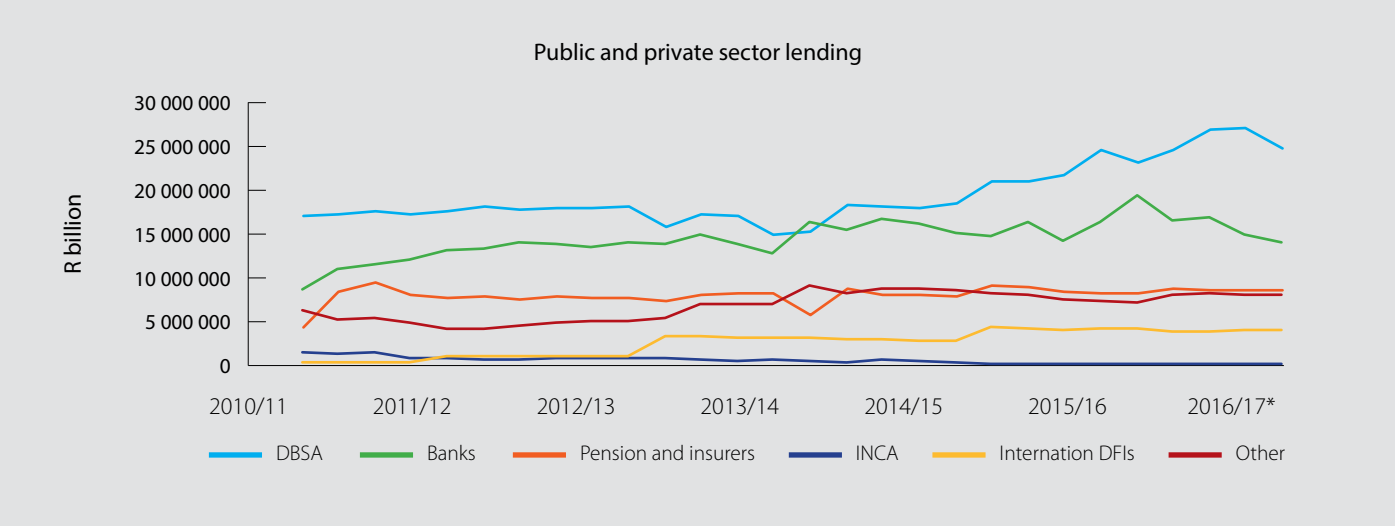
Figure 4: Public and private sector lending to municipalities



**Incl QI-IV*
Data sources: Banks, DBSA, INCA, DFIs, STRATE, SARB

Figure 4 above illustrates the total outstanding debt owed by the municipalities to the public sector versus private sector. During the 2016/17 financial year, debt held by the public sector has been fluctuating from a low of R31.9 billion in the first quarter to a high of R34.7 billion the third quarter and then decreased to R32.1 billion in the fourth quarter. Notwithstanding this observation, the year-on-year comparison indicates an increase of 5.2 percent in the municipal long term debt portfolio held by the public sector from R30.5 billion in FY 2015/16 to R32.1 billion in FY 2016/17. Meanwhile, the private sector has declined significantly by R4.7 billion or 14.5 percent from R32.3 billion in FY 2015/16 to R27.6 billion in FY 2016/17. The share of aggregate long term debt between the public sector and the private sector is 54 percent and 46 percent respectively, rendering the public sector the largest investor in municipal long term debt.

Figure 5: Largest lenders to municipalities



**Incl. Q I-IV*
Data sources: Banks, DBSA, INCA, DFIs, STRATE, SARB

As observed in figure 5 above, the Development Bank of Southern Africa (DBSA) has maintained its position throughout the years as the largest lender to municipalities. The DBSA is the major contributor to the public sector category and the DFI's exposure has declined during the FY 2016/17 as seen in figure 4 above. The same is observed on the commercial banks which hold the largest portfolio of municipal long term debt. Since the beginning of the 2016/17 financial year, the commercial banks' exposure has declined constantly from R16.7 billion in the first quarter to R14.1 billion in the fourth quarter. The exposure for the category 'other' (consisting of the household sector, non-residents and other financial institutions) as well as pension fund & insurers has remained relatively flat while that of International Development Finance Institutions have been fluctuating in the range of about R4 billion during FY 2016/17.

DISCUSSION

4. JULY BOND ISSUES

July of 2017 was a noteworthy month, with two metropolitan municipalities selling bonds early in the 2017/2018 financial year, which began July 1. These bonds will be listed on the Johannesburg Stock Exchange. These issues are very positive in terms of the National Treasury's goal of promoting a deeper and wider municipal bond market. Moody's Investor Services has rated both Metros' bonds as Baa3 (global scale rating) and Aaa.za (South African national scale rating).

First, Ekurhuleni issued R1.3 billion in tradable securities with two different maturities: R500 million with a final redemption in 2027, and R800 million with a final redemption in 2032. The 10-year bond was sold at auction and the 15-year issue was privately placed. Ekurhuleni is home to some 3 million people, the O.R. Tambo international airport, and a significant portion of South Africa's manufacturing capacity.

A week after the Ekurhuleni auction, Cape Town auctioned R1 billion rand of "green bonds" with a final redemption in 2027. The "green bond" label means that the bonds will be used for projects that are intended to help the city adapt to, and/or mitigate, the effects of climate change. In addition to the favourable credit rating, Moody's rated the Cape Town bond GB1 (excellent) under its newish (2016) Green Bonds Assessment methodology.

Both the Ekurhuleni and Cape Town auctions were significantly oversubscribed, indicating strong investor interest in South Africa's metropolitan municipalities.

Both cities' bonds featured an amortization structure in which principal repayments are in the same amount each period. The result is that the instalments are larger in the earlier years, because they include this fixed principal repayment as well as the interest due on the entire outstanding amount. The instalment payments naturally decrease over time, as the amount of interest due on the outstanding amount shrinks. From a liquidity perspective, such a debt retirement structure can be challenging for a municipality since the highest instalments are due in the early years. Ordinarily, municipal revenues rise over time, rather than fall, so that a flat or mildly rising debt service profile is usually more suitable for municipalities. However, when a municipality has substantial unused borrowing capacity, this is not necessarily a binding constraint.

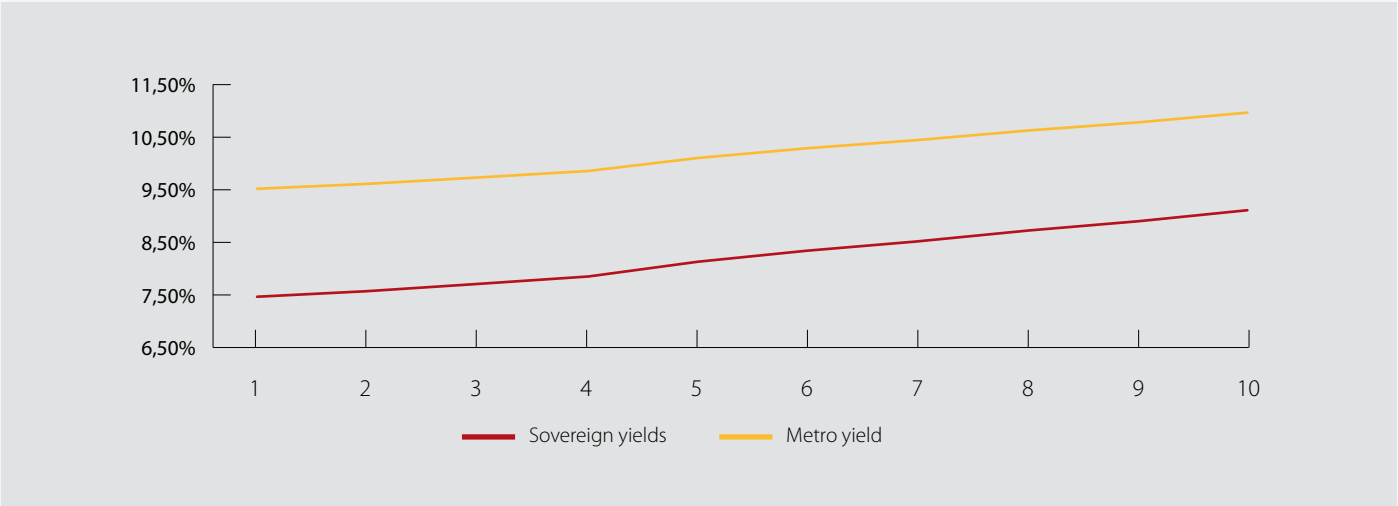
Both cities benchmarked their amortizing bond issues against the National Treasury's R186 bond, which matures in three tranches, in 2025-27. The notional yield spreads vs. the R186 were 175 basis points for the Ekurhuleni auction, or 10.52 percent per annum; and 133 basis points for Cape Town, or 10.17 percent per annum. While these spreads appear attractive, the average maturities of the municipal bonds are much shorter than the National Treasury bonds, making comparison difficult.

5. MUNICIPAL INTEREST RATES AND YIELD SPREADS

The market for debt obligations is dynamic. The interest rate that a given municipality must pay depends on investors' changing expectations about inflation, perceptions of the borrower's creditworthiness, and alternative investment opportunities. These factors are subjective, and change over time. As the term of a loan increases, lenders want a higher interest rate, because there is more risk (e.g. that inflation will rise, that the borrower will be unable to repay, that better investment opportunities might arise) with longer maturities. As a result, the yield curve is typically upward sloping. In Figure 6 below, the red line shows the 10-year yield-to-maturity (YTM) curve, as of early July 2017, for South Africa's sovereign debt instruments (the x axis represents the number of years to maturity). Borrowing for one year would cost the national government 7.52 percent of the principal amount, whereas borrowing for a ten-year term would cost the National Treasury 8.90 percent per annum. This 138 basis point difference reflects the lower risk of shorter term bonds, with all other factors being held constant.

Even the best-managed municipalities are generally seen as less creditworthy than the national government, and so for any given maturity, a municipality must pay a premium over the sovereign rate. How much depends on the market's perception of the municipality's creditworthiness. This premium is expressed as a yield spread, i.e. the difference between the interest rate a particular municipality must pay and the interest rate the national government must pay, assuming similar maturities. Like the yield curve, the spread curve is usually up sloping – in other words, with longer terms, the premium a municipality must pay increases, relative to the sovereign. For simplicity, the yellow line in Figure 6 shows a yield spread for a hypothetical municipal borrower, at a constant 200 basis point margin over the sovereign rate. In practice, the spread would usually be less for shorter maturities.

Figure 6: Sovereign and Metro yield spreads



TERM OF BORROWING

Not all bonds with a 10-year term have the same structure, even though the final maturity date may be the same. All other things being equal, the risk to the lender, and the price of credit for the municipality, depend on how capital repayment is structured. We illustrate this with three graphs, all of which show a 10-year term, and assume a 10 percent interest rate.

Figure 7 below illustrates what is sometimes referred to as a vanilla bond structure. This is the most common payment structure for government bonds, including municipal bonds, in South Africa and globally. Interest coupons are paid during the term (usually semi-annually, though for simplicity Figure 7 shows annual payments), and the principal amount is paid in full at the end of the term. If it uses this type of structure, a municipality will often create a sinking fund for annual deposits, either of its own initiative or because it is required in the bond covenants, to ensure that it has the principal available at the end of the term. Pricing a vanilla municipal bond is relatively easy: investors form a view about the riskiness of the municipal obligation relative to a sovereign obligation of the same maturity, and quote or bid an interest rate that reflects the sovereign rate and the yield spread, as illustrated by the yellow line in Figure 6.

Figure 7: Bullet at end of term

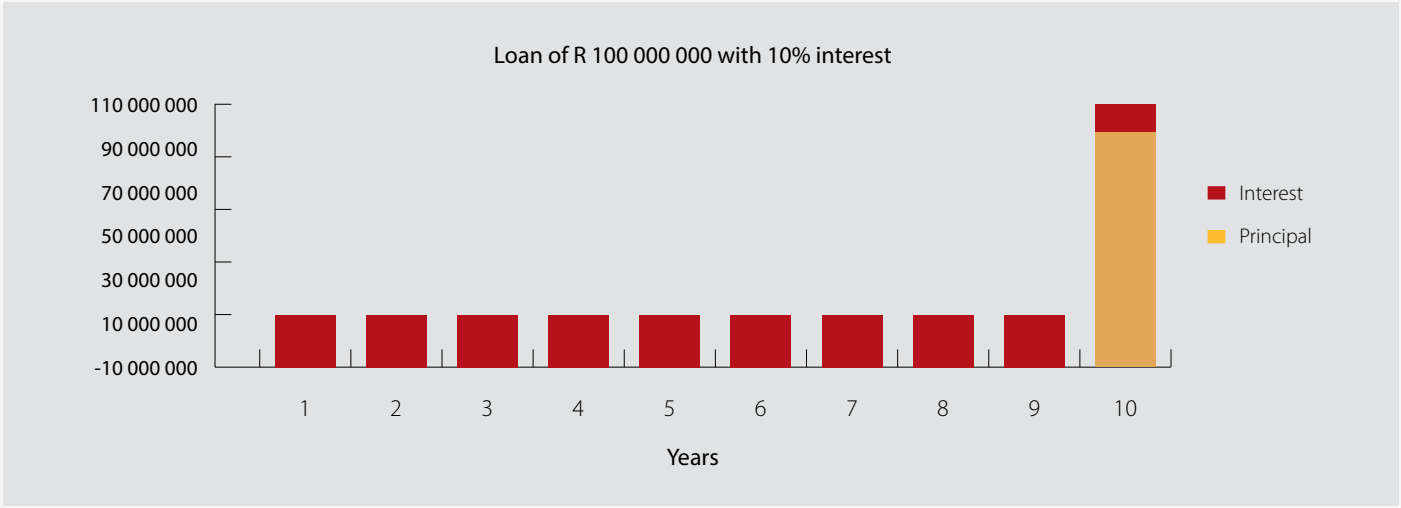


Figure 8 below shows a level amortization structure, in which each instalment is the same amount. In South Africa, such a level principal and interest structure has been more associated with loans than with bonds. However, it can be used with either instrument, and is commonly used for municipal debt obligations in other countries. A level principal and interest structure is well-suited to municipal finances, because tax and tariff revenues tend to be relatively stable (assuming the municipality is well managed and creditworthy), and if anything, increasing over time. There can be many other variations on amortization, including structures with a grace period at the beginning, or one with gradually rising payments to reflect projections of rising municipal revenues.

Figure 8: Level of principal payments over 10 years

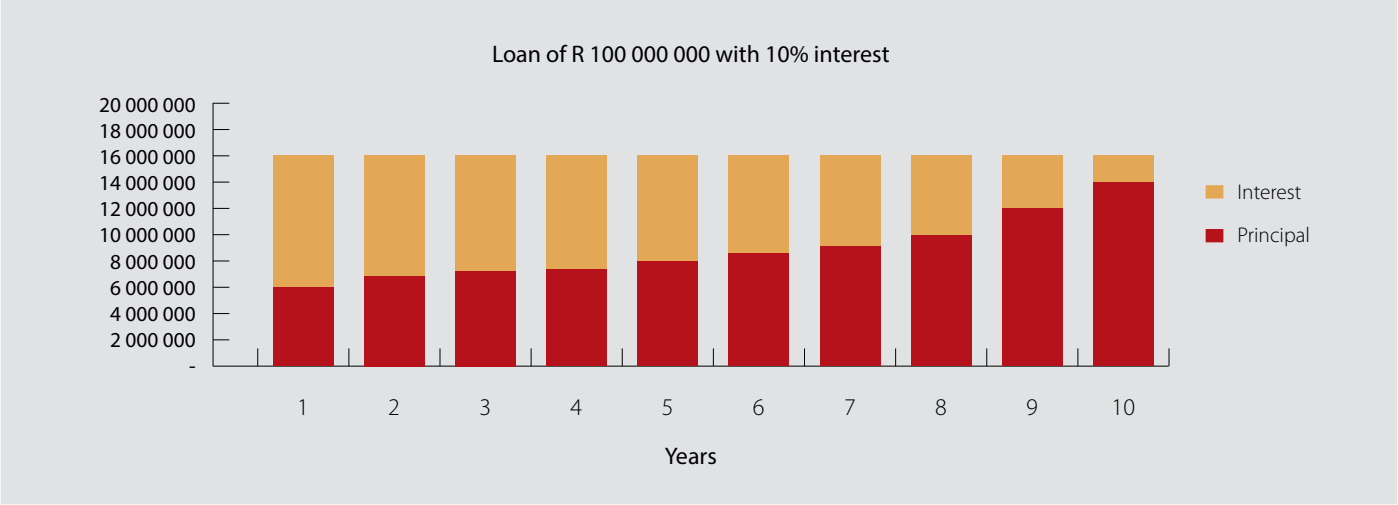
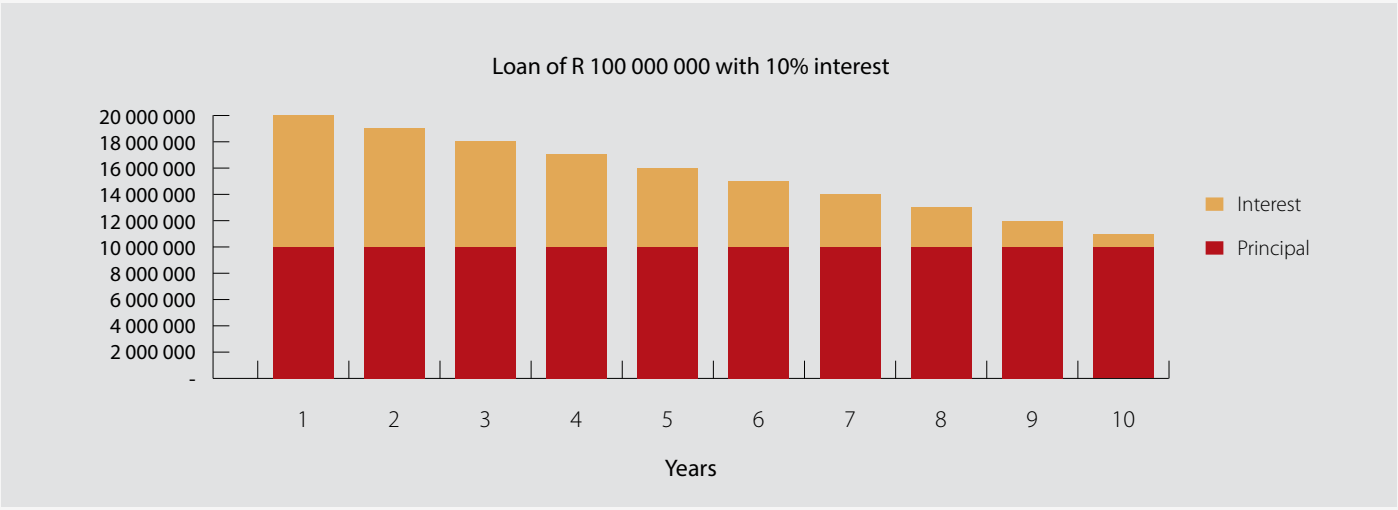


Figure 9 below depicts a less common structure, with level payment of principal and declining interest. This debt service profile is not intuitively well-matched to a municipality's revenue profile, since the highest instalments come early in the loan. It is, however, attractive for an investor, who will have recovered half of its principal investment by the midpoint, rather than waiting to be repaid at the end of the term, as with a vanilla structure. Note that the average maturity of principal with this structure is only 5.5 years, even though it has a 10 year term to final maturity.

Figure 9: Level of principal payments over 10 years



PRICING AN AMORTIZED BOND

Given the discussion above about the yield curve and term risk, what interest rate should an investor expect to pay if it purchases a municipality's amortizing debt obligations?

The answer lies in thinking of each principal repayment separately. In the example shown in Figure 9, the municipality has committed to pay R10 million in principal at the end of year one, another R10 million at the end of year 2, etc. And each of these "separate" obligations would carry annual interest until it is paid. So this hypothetical bond issue is essentially made up of a one year maturity, a two-year maturity, etc. Breaking the package down into its 10 principal instalments, each with a different maturity helps the investor think about pricing.

The investor could start by looking at the "risk-free" sovereign yield curve, shown as the red line in Figure 6 above, and numerically in blue in Table 3 below. This curve represents the interest rate the National Treasury would pay, as of early July 2017, for each maturity. Then, the investor must consider the additional risk of investing in this municipal obligation, as opposed to a sovereign instrument. The municipal yield curve will vary from one municipality to another, depending on investors' perceptions about the credit quality of the municipality. For simplicity, let us assume a constant 200 basis point yield spread for the hypothetical municipality, as illustrated in Figure 6.

Table 3 below shows the resulting annual interest rates: the first year's instalment of principal would be priced at 9.52 percent per annum, and the annual interest rate for each subsequent principal instalment would rise in parallel with the sovereign YTM curve, reaching a high of 10.90 percent for the final instalment, due 10 years from the date of issue.

Table 3: Annual Interest Rates

Years	Sovereign YTM %	Metro YTM %
1	7,52	9,52
2	7,62	9,62
3	7,72	9,72
4	7,84	9,84
5	8,08	10,08
6	8,25	10,25
7	8,41	10,41
8	8,57	10,57
9	8,73	10,73
10	8,9	10,9

In practice, the municipality offering its bonds at auction might require investors to offer a flat interest rate across all of the principal instalments, so the investor would have to convert these varying interest rates into a time-weighted average. For our hypothetical municipality, this would come to 10.40 percent per annum, and so the investor might offer a flat interest rate of 10.40%, across all of the instalments. Other potential investors would make similar calculations, though their judgements about the credit quality of the municipality relative to the sovereign would vary. The auction would clear at the lowest price where all of the bonds on offer could be sold.

6. CONCLUSIONS

In structuring a bond issue or a loan, a municipality must balance its needs with those of investors or lenders. The self-interest of the issuer and the investor will tend to pull in opposite directions across several dimensions, including term and price. For example, municipalities would often like to borrow with longer maturities, allowing them to shift more of the cost of investments to future users. Certainly, they are interested in minimizing the cost of borrowing. Lenders would generally like to have their capital repaid sooner, rather than later, and are interested in the highest rate of return. There are institutional investors that may find long maturities attractive, provided the interest rate is appropriate.

As we observed at the start of this article, interest rates for any borrower are generally higher for longer maturities. Conversely, they should be lower for shorter maturities. The price for any particular structure is a matter for the markets to decide. From a municipal finance perspective, it is important to look beyond the nominal term of the bond issue, and take the payment schedule into account when comparing interest rates and spreads.