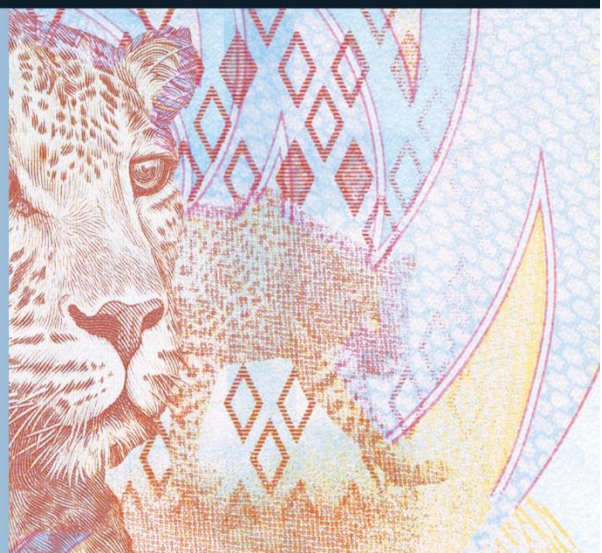


Draft Statement of methodology and the policies governing the South African Reserve Bank- administered interest rate benchmarks



South African Reserve Bank

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1. Introduction

- 1.1. The purpose of this document is to provide a technical specification of the suite of interest rate benchmarks (hereinafter referred to as 'benchmarks') that are administered by the South African Reserve Bank (SARB), as well as an overview of the policies that govern these benchmarks.
- 1.2. The SARB is the administrator of the following benchmarks:
- a) South African Rand Interbank Overnight Rate (ZARIBOR)
 - b) South African Secured Overnight Financing Rate (ZASFR)
 - c) South African Rand Overnight Index Average (ZARONIA)
 - d) Johannesburg Interbank Average Rate (JIBAR)*
 - e) Term Wholesale Financial Corporate Fixed Deposit Benchmark Rate
 - f) Term Wholesale Non-financial Corporate Fixed Deposit Benchmark Rate
- 1.3. Any general reference to benchmarks in this paper refers to all of the above-mentioned benchmarks except for JIBAR. The technical specification for JIBAR is provided separately in the JIBAR Code of Conduct, Governance Process and Operating Rules.

* JIBAR is not specified in this paper.

Statements of methodology and underlying interest

2. South African Rand Interbank Overnight Rate (ZARIBOR)

2.1. Statement of underlying interest

2.1.1. ZARIBOR is the measure of the interest rate at which rand-denominated interbank overnight deposits in South Africa are obtained, where credit, liquidity and other risks are minimal.

2.2. Statement of methodology

2.2.1. *Eligible transactions*

2.2.1.1. ZARIBOR is based on transactions that are:

- a) rand-denominated, unsecured deposits with a maturity of one business day (i.e. overnight);
- b) traded between commercial banks registered in terms of the Banks Act 94 of 1990 (Banks Act);
- c) executed between 07:00 hours and 23:59 hours in South African time;
- d) settled on the same day in the South African money market; and
- e) equal to, or greater than, R50 million in value.

2.2.1.2. Only transactions concluded at arm's length are eligible. Intra-group transactions are therefore not eligible.

2.2.2. *Calculation methodology*

2.2.2.1. On each South African business day, ZARIBOR is determined as a trimmed, volume-weighted mean of the central 80% of the distribution of interest rates paid on eligible unsecured interbank overnight deposits, rounded off to three decimal places.

- 2.2.2.2. The trimmed, volume-weighted mean is calculated by:
- a) ordering the transactions from the lowest rate to the highest rate;
 - b) aggregating the transactions occurring at each rate level;
 - c) removing the top and bottom 10% in volume terms; and
 - d) calculating the mean of the remaining 80% of the volume-weighted distribution rates. (A pro rata calculation is applied to those volumes that span the thresholds for trimming to ensure that exactly 80% of the total eligible volume is used in the calculation of the volume-weighted mean.)

2.3. Contingency arrangements

- 2.3.1. Contingency measures will apply in the event that there is insufficient data to reliably determine the level of the benchmark and/or technological difficulties which prevent the calculation of the benchmark in a manner consistent with the specified calculation methodology. Furthermore, contingency measures may be used in times of market stress or when there are unexpected disruptions due to a failure in critical infrastructure or other relevant factors.
- 2.3.2. On any given day, contingency measures will be triggered when:
- a) the number of contributing banks is three or less; and/or
 - b) the volume of transactions submitted by one bank constitutes more than two-thirds of the total volume submitted.
- 2.3.3. In the event that contingency measures are triggered, the transactions submitted for the day concerned will be combined with the transactions for the previous day. However, the rate of the previous day's transactions will be adjusted for any changes in relevant market rates, in particular any changes in the repurchase rate (repo rate).
- 2.3.4. Contingency arrangements are intended to be used for relatively short periods of time. Therefore, all parties involved in the benchmark determination process should at all times take reasonable steps to avoid

undue operational risk that could compromise the quality and/or integrity of the benchmarks.

- 2.3.5. In cases where there is an insufficient volume of transactions and/or the number of contributing banks is below the threshold for a period exceeding five consecutive business days, a substitute rate will be used, based on the repo rate plus a historical long-term spread between ZARIBOR and the repo rate.
- 2.3.6. The substitute rate will apply for a period not exceeding three months. Should the data sufficiency problem persist for a period longer than three months, the SARB, in consultation with the market, will devise a long-term solution, which might include changes to the methodology.

3. South African Secured Overnight Financing Rate (ZASFR)

3.1. Statement of underlying interest

3.1.1. ZASFR is the measure of the cost of raising secured overnight funding using eligible collateralised transactions.

3.2. Statement of methodology

3.2.1. *Eligible transactions*

3.2.1.1. ZASFR is based on transactions that are:

- a) classic repurchase transactions or sell buy-back transactions in terms of section 67 of the Banks Act, collateralised by government securities;
- b) traded between commercial banks registered in terms of the Banks Act and their external clients;
- c) bilateral and tri-party repurchase transactions or sell buy-back transactions concluded by commercial banks in the rand-denominated interbank market; and
- d) equal to, or greater than, R50 million in value.

3.2.1.2. Only transactions concluded at arm's length are eligible. Intra-group transactions are therefore not eligible, except where the transactions are concluded between a commercial bank and its Prime Broking Desk.

3.2.1.3. Transactions concluded as part of refinancing operations conducted between commercial banks and the SARB are not included.

3.2.2. *Calculation methodology*

3.2.2.1. On each South African business day, ZASFR is determined as a trimmed, volume-weighted mean of the central 80% of the distribution of interest rates paid on eligible transactions, rounded off to three decimal places.

3.2.2.2. The trimmed, volume-weighted mean is calculated by:

- a) ordering the transactions from the lowest rate to the highest rate;
- b) aggregating the transactions occurring at each rate level;
- c) removing the top and bottom 10% in volume terms; and
- d) calculating the mean of the remaining 80% of the volume-weighted distribution rates. (A pro rata calculation is applied to those volumes that span the thresholds for trimming to ensure that exactly 80% of the total eligible volume is used in the calculation of the volume-weighted mean.)

3.3. Contingency arrangements

3.3.1. Contingency measures will apply in the event that there is insufficient data to reliably determine the level of the benchmark and/or technological difficulties which prevent the calculation of the benchmark in a manner consistent with the specified calculation methodology. Furthermore, contingency measures may be used in times of market stress or when there are unexpected disruptions due to a failure in critical infrastructure or other relevant factors.

3.3.2. In cases where there is insufficient volume of transactions and/or the number of contributing banks is below the threshold for a period exceeding five consecutive business days, a substitute rate will be used, based on the repo rate plus a historical long-term spread between ZASFR and the repo rate.

3.3.3. The substitute rate will apply for a period not exceeding three months. Should the data sufficiency problem persist for a period longer than three

months, the SARB, in consultation with the market, will devise a long-term solution, which might include changes to the methodology.

4. South African Rand Overnight Index Average (ZARONIA)

4.1. Statement of underlying interest

4.1.1. ZARONIA is the measure of the interest rate at which rand-denominated overnight wholesale funds[†] in South Africa are obtained by banks, where credit, liquidity and other risks are minimal.

4.2. Statement of methodology

4.2.1. *Eligible transactions*

4.2.1.1. ZARONIA is based on unsecured overnight call deposits placed with commercial banks, which are classified as deposit-taking institutions in the Banks Act.

4.2.1.2. Only transactions concluded at arm's length are eligible. Intra-group transactions are therefore not eligible, except where the transactions are concluded between a commercial bank and its Prime Broking Desk.

4.2.1.3. In measuring wholesale funds, the following counterparty types are eligible:

- a) non-bank financial corporates;
- b) non-financial corporates;
- c) commercial banks; and
- d) public sector institutions.

[†] For the purposes of the liquidity coverage ratio (LCR), 'unsecured wholesale funding' is defined as those liabilities and general obligations that are raised from non-natural persons (i.e. legal entities, including sole proprietorships and partnerships), and which are not collateralised by legal rights to specifically designated assets owned by the borrowing institution in the case of bankruptcy, insolvency, liquidation or resolution. Obligations related to derivative contracts are explicitly excluded from this definition.

4.2.1.4. Only transactions that are settled on the same day as the trade date (T+0) and maturing the following business day (T+1) are eligible.

4.2.1.5. The minimum transaction size is R20 million.

4.2.2. *Calculation methodology*

4.2.2.1. On each South African business day, ZARONIA is determined as a trimmed, volume-weighted mean of the central 80% of the distribution of interest rates paid on eligible unsecured call deposits, rounded off to three decimal places.

4.2.2.2. The trimmed, volume weighted mean is calculated by:

- a) ordering the transactions from the lowest rate to the highest rate;
- b) aggregating the transactions occurring at each rate level;
- c) removing the top and bottom 10% in volume terms; and
- d) calculating the mean of the remaining 80% of the volume-weighted distribution rates. (A pro rata calculation is applied to those volumes that span the thresholds for trimming to ensure that exactly 80% of the total eligible volume is used in the calculation of the volume-weighted mean.)

4.3. Contingency arrangements

4.3.1. Contingency measures will apply in the event that there is insufficient data to reliably determine the level of the benchmark and/or technological difficulties which prevent the calculation of the benchmark in a manner consistent with the specified calculation methodology. Furthermore, contingency measures may be used in times of market stress or when there are unexpected disruptions due to a failure in critical infrastructure or other relevant factors.

4.3.2. On any given day, contingency measures will be triggered when:

- a) the number of contributing banks is three or less; and/or

- b) the volume of transactions submitted by one bank constitutes more than two-thirds of the total volume submitted.

4.3.3. In the event that contingency measures are triggered, the transactions submitted for the day concerned will be combined with the transactions for the previous day. However, the rate of the previous day's transactions will be adjusted for any changes in relevant market rates, in particular any changes in the repo rate.

4.3.4. Contingency arrangements are intended to be used for relatively short periods of time. Therefore, all parties involved in the benchmark determination process should at all times take reasonable steps to avoid undue operational risk that could compromise the quality and/or integrity of the benchmarks.

4.3.4.1. In cases where there is an insufficient volume of transactions and/or the number of contributing banks is below the threshold for a period of more than five consecutive business days, a substitute rate will be used, based on the repo rate plus a historical long-term spread between ZARONIA and the repo rate.

4.3.4.2. The substitute rate will apply for a period not exceeding three months. Should the data sufficiency problem persist for a period longer than three months, the SARB, in consultation with the market, will devise a long-term solution, which might include changes to the calculation methodology.

5. Term Wholesale Financial Corporate Fixed Deposit Benchmark Rate

5.1. Statement of underlying interest

5.1.1. The Term Wholesale Financial Corporate Fixed Deposit Benchmark Rate is the measure of the interest rate at which unsecured rand-denominated term wholesale funds in South Africa are obtained by banks in the money market from other commercial banks and/or non-bank financial corporates.

5.2. Statement of methodology

5.2.1. *Defined tenors*

5.2.1.1. There are six defined tenors for the term deposit benchmark rate, namely: one week, one month, three months, six months, nine months and twelve months.

5.2.2. *Eligible transactions*

5.2.2.1. The term deposit benchmark rate is based on bilaterally negotiated, unsecured, fixed-rate deposit transactions in the wholesale money market.

5.2.2.2. Only borrowing transactions concluded at arm's length are eligible. Intra-group transactions are therefore not eligible.

5.2.2.3. In measuring wholesale funds, the following counterparty types are eligible:

- a) non-bank financial corporates; and
- b) commercial banks.

5.2.2.4. Only fixed deposit non-tradable transactions with maturity dates that fall within the range specified for each defined tenor in the following tenor bucketing matrix are eligible:

Tenor	Business days
1 week	±2
1 month	±5
3 months	±5
6 months	±10
9 months	±10
12 months	±15

5.2.2.5. The minimum transaction size is R20 million.

5.2.3. *Calculation methodology*

5.2.3.1. On each South African business day, the rate of each defined tenor of the Term Wholesale Financial Corporate Fixed Deposit Benchmark Rate is calculated as a trimmed, volume-weighted mean, rounded off to three decimal places, of the rates on eligible transactions.

5.2.3.2. The trimmed, volume-weighted mean is calculated by:

- ordering the transactions from the lowest rate to the highest rate;
- aggregating the transactions occurring at each rate level;
- removing the top and bottom 10% in volume terms; and
- calculating the mean of the remaining 80% of the volume-weighted distribution of rates. (A pro rata calculation is applied to those volumes that span the thresholds for trimming to ensure that exactly 80% of the total eligible volume is used in the calculation of the volume-weighted mean.)

5.3. Contingency arrangements

5.3.1. Contingency measures will apply in the event that there is insufficient data to reliably determine the level of the benchmark and/or technological difficulties which prevent the calculation of the benchmark in a manner consistent with the specified calculation methodology. Furthermore,

contingency measures may be used in times of market stress or when there are unexpected disruptions due to a failure of critical infrastructure or other relevant factors.

5.3.2. A short-term contingency measure will be triggered when:

- a) the number of reporting banks is less than three; and/or
- b) one bank accounts for two-thirds or more of the total transaction volumes.

5.3.3. In cases where a contingency measure is triggered *and* there are sufficient transactions in nearby maturities, the following fallbacks (referred to as 'contingency levels') will be used progressively and in the order specified below:

- a) Contingency Level 1: Linearly interpolated rates using adjacent defined tenors
- b) Contingency Level 2: Ascribed rates using transactions at non-defined tenors
- c) Contingency Level 3: Rates based on eligible transactions from prior dates

5.3.4. *Contingency Level 1: Linearly interpolated rates using adjacent defined tenors*

5.3.4.1. Linear interpolation will be used to determine the rate for a defined tenor when the determination of both of its adjacent tenors has satisfied the calculation methodology in section 5.2.3. Hence, this technique may only be used in the determination of all tenors except for the one week and twelve months tenors.

5.3.4.2. The final rate for the defined tenor concerned will be the sum of two components, namely: the linearly interpolated rate and the spread adjustment factor (SAF), which seeks to incorporate the curvature of the money market yield curve.

- 5.3.4.3. The SAF will be calculated as the mean of the differences obtained when subtracting the previous five days' linearly interpolated rates from their related published rates.
- 5.3.5. *Contingency Level 2: Ascribed rates using transactions at non-defined tenors*
- 5.3.5.1. In cases where the defined tenor rate is not determinable using the technique specified in Contingency Level 1, non-standard maturity transaction data may be used to ascribe a rate for the defined tenor. However, such data must comply with the eligibility criteria specified in section 5.2.2, except where the maturity of the transaction does not fall within the specified tenor buckets and yet falls between one week and twelve months.
- 5.3.5.2. The objective of using transactions at non-defined tenors is to infer what the transactions at defined tenors would be by ascribing to them the rates and volumes based on the observed non-standard maturity transaction. The ascribed rate is determined as the spread between the observed transaction rate and the linearly interpolated rate obtained by using the previous day's published adjacent defined tenor rate fixings, with the same maturity. The ascribed volume is obtained by splitting the volume of the observed transaction between the adjacent defined tenors using the linearly interpolated weights derived from the days between the spot of the observed transaction and each adjacent defined tenor.
- 5.3.5.3. The final rate is calculated as the volume-weighted average rate of all the transactions ascribed to that tenor, if the ascribed volume of each transaction exceeds the minimum threshold of R20 million.
- 5.3.6. *Contingency Level 3: Rates based on eligible transactions from prior dates*
- 5.3.6.1. Contingency Level 3 may be employed when a rate for a defined tenor cannot be determined using the previously mentioned techniques. The

technique for Contingency Level 3 applies to all defined tenors except the one week tenor.

5.3.6.2. Computationally, the technique combines the eligible reported transactions (T-1), if there be any, with the transactions of the previously published tenor rate adjusted for any changes in relevant market rates, in particular any changes in the repo rate and/or the forward rate agreements (FRAs) rates.

- a) The rates of the underlying transactions for the previously published three months tenor rate will be adjusted for any changes in the repo rate.
- b) The rates of the underlying transactions for the previously published six months tenor rate will be adjusted by the average of the changes in the repo rate and the 3X6 FRA.
- c) The rates of the underlying transactions for the previously published nine months tenor rate will be adjusted by the average of the changes in the repo rate, the 3X6 FRA and the 6X9 FRA.
- d) The rates of the underlying transactions for the previously published twelve months tenor rate will be adjusted by the average of the changes in the repo rate as well as the 3X6, 6X9 and 9x12 FRAs.

5.3.6.3. The calculation methodology specified in 5.2.3 is then applied to the combined pool of transactions in order to determine the appropriate rates for publication.

5.3.7. *Persisting data sufficiency issues*

5.3.7.1. Contingency arrangements are intended to be used for relatively short periods of time. In cases where data sufficiency conditions are not met for a period exceeding five consecutive business days, a substitute rate may be used, based on the repo rate plus a historical long-term spread.

5.3.7.2. The substitute rate may not be used for periods exceeding three months. Persistent data sufficiency issues may be an indication that the calculation

methodology should be reviewed and potentially amended to account for changes in the markets used to measure the underlying interest. Consequently, the SARB may initiate a review of the benchmark determination process and may also initiate any appropriate action in line with the policy for reviews and material changes.

- 5.3.7.3. Nonetheless, it is important that all parties involved in the benchmark determination process take reasonable steps at all times to avoid undue operational risk that could compromise the quality and/or integrity of the benchmarks.

6. Term Wholesale Non-financial Corporate Fixed Deposit Benchmark Rate

6.1. Statement of underlying interest

6.1.1. The Term Wholesale Non-financial Corporate Fixed Deposit benchmark rate is the measure of the interest rate at which unsecured rand-denominated term wholesale funds in South Africa are obtained by banks in the money market from non-financial corporates and public sector depositors.

6.2. Statement of methodology

6.2.1. *Defined tenors*

6.2.1.1. There are six defined tenors for the term wholesale non-financial corporate fixed deposit benchmark rate, namely: one week, one month, three months, six months, nine months and twelve months.

6.2.2. *Eligible transactions*

6.2.2.1. The Term Wholesale Non-financial Corporate Fixed Deposit benchmark rate is based on bilaterally negotiated, unsecured fixed-rate deposit transactions in the wholesale money market.

6.2.2.2. Only borrowing transactions concluded at arm's length are eligible. Intra-group transactions are therefore not eligible.

6.2.2.3. In measuring wholesale funds, the following counterparty types are eligible:

- a) Non-financial corporates; and
- b) Public sector institutions.

- 6.2.2.4. Only fixed deposit non-tradable transactions with maturity dates that fall within the range specified for each defined tenor in the following tenor bucketing matrix are eligible:

Tenor	Business days
1-week	±2
1-month	±5
3-months	±5
6-months	±10
9-months	±10
12-months	±15

- 6.2.2.5. The minimum transaction size is R20 million.

6.2.3. *Calculation methodology*

- 6.2.3.1. On each South African business day, the rate of each defined tenor of the Term Wholesale Non-financial Corporate Fixed Deposit benchmark rate is calculated as a trimmed, volume-weighted mean, rounded off to the three decimal places, of the rates on eligible transactions.

- 6.2.3.2. The trimmed, volume-weighted mean is calculated by:
- ordering transactions from the lowest rate to the highest;
 - aggregating the transactions occurring at each rate level;
 - removing the top and bottom 10% in volume terms; and
 - calculating the mean of the remaining 80% of the volume-weighted distribution of rates. (A pro rata calculation is applied to volumes that span the thresholds for trimming to ensure that exactly 80% of the total eligible volume is used in the calculation of the volume-weighted mean.)

6.3. Contingency arrangements

- 6.3.1. Contingency measures will apply in the event that there is insufficient data to reliably determine the level of the benchmark and/or technological difficulties which prevent the calculation of the benchmark in a manner consistent with the specified calculation methodology. Furthermore, contingency measures may be used in times of market stress or when there are unexpected disruptions due to a failure of critical infrastructure or other relevant factors.
- 6.3.2. A short-term contingency measure will be triggered when:
- c) the number of reporting banks is less than three; and/or
 - d) one bank accounts for two-thirds or more of the total transaction volumes.
- 6.3.3. In cases where a contingency measure is triggered *and* there are sufficient transactions in nearby maturities, the following fallbacks (referred to as 'contingency levels') will be used progressively and in the order specified below:
- d) Contingency Level 1: Linearly interpolated rates using adjacent defined tenors
 - e) Contingency Level 2: Ascribed rates using transactions at non-defined tenors
 - f) Contingency Level 3: Rates based on eligible transactions from prior dates
- 6.3.4. *Contingency Level 1: Linearly interpolated rates using adjacent defined tenors*
- 6.3.4.1. Linear interpolation will be used to determine the rate for a defined tenor when the determination of both of its adjacent tenors has satisfied the calculation methodology in section 5.2.3. Hence, this technique may only be used in the determination of all tenors except for the one week and twelve months tenors.

- 6.3.4.2. The final rate for the defined tenor concerned will be the sum of two components, namely: the linearly interpolated rate and the spread adjustment factor (SAF), which seeks to incorporate the curvature of the money market yield curve.
- 6.3.4.3. The SAF will be calculated as the mean of the differences obtained when subtracting the previous five days' linearly interpolated rates from their related published rates.
- 6.3.5. *Contingency Level 2: Ascribed rates using transactions at non-defined tenors*
- 6.3.5.1. In cases where the defined tenor rate is not determinable using the technique specified in Contingency Level 1, non-standard maturity transaction data may be used to ascribe a rate for the defined tenor. However, such data must comply with the eligibility criteria specified in section 5.2.2, except where the maturity of the transaction does not fall within the specified tenor buckets and yet falls between one week and twelve months.
- 6.3.5.2. The objective of using transactions at non-defined tenors is to infer what the transactions at defined tenors would be by ascribing to them the rates and volumes based on the observed non-standard maturity transaction. The ascribed rate is determined as the spread between the observed transaction rate and the linearly interpolated rate obtained by using the previous day's published adjacent defined tenor rate fixings, with the same maturity. The ascribed volume is obtained by splitting the volume of the observed transaction between the adjacent defined tenors using the linearly interpolated weights derived from the days between the spot of the observed transaction and each adjacent defined tenor.
- 6.3.5.3. The final rate is calculated as the volume-weighted average rate of all the transactions ascribed to that tenor, if the ascribed volume of each transaction exceeds the minimum threshold of R20 million.

6.3.6. *Contingency Level 3: Rates based on eligible transactions from prior dates*

6.3.6.1. Contingency Level 3 may be employed when a rate for a defined tenor cannot be determined using the previously mentioned techniques. The technique for Contingency Level 3 applies to all defined tenors except the one week tenor.

6.3.6.2. Computationally, the technique combines the eligible reported transactions (T-1), if there be any, with the transactions of the previously published tenor rate adjusted for any changes in relevant market rates, in particular any changes in the repo rate and/or the forward rate agreements (FRAs) rates.

e) The rates of the underlying transactions for the previously published three months tenor rate will be adjusted for any changes in the repo rate.

f) The rates of the underlying transactions for the previously published six months tenor rate will be adjusted by the average of the changes in the repo rate and the 3X6 FRA.

g) The rates of the underlying transactions for the previously published nine months tenor rate will be adjusted by the average of the changes in the repo rate, the 3X6 FRA and the 6X9 FRA.

h) The rates of the underlying transactions for the previously published twelve months tenor rate will be adjusted by the average of the changes in the repo rate as well as the 3X6, 6X9 and 9x12 FRAs.

6.3.6.3. The calculation methodology specified in 5.2.3 is then applied to the combined pool of transactions in order to determine the appropriate rates for publication.

6.3.7. *Persisting data sufficiency issues*

6.3.7.1. Contingency arrangements are intended to be used for relatively short periods of time. In cases where data sufficiency conditions are not met for

a period exceeding five consecutive business days, a substitute rate may be used, based on the repo rate plus a historical long-term spread.

- 6.3.7.2. The substitute rate may not be used for periods exceeding three months. Persistent data sufficiency issues may be an indication that the calculation methodology should be reviewed and potentially amended to account for changes in the markets used to measure the underlying interest. Consequently, the SARB may initiate a review of the benchmark determination process and may also initiate any appropriate action in line with the policy for reviews and material changes.
- 6.3.7.3. Nonetheless, it is important that all parties involved in the benchmark determination process take reasonable steps to avoid undue operational risk that would compromise the quality and integrity of the benchmarks at all times

Policies governing interest rate benchmarks

7. Data collection and data quality

- 7.1. The suite of benchmarks stipulated above is based on confidential statistical information relating to money market transactions collected daily in accordance with the reporting instructions specified by the SARB. The reporting instructions include standards for the transmission and accuracy of data.
- 7.2. The benchmark production process includes verifying the validity and plausibility of eligible transactions, which may result in the SARB raising queries with reporting agents and, where necessary, determining an appropriate course of action (whether to include or exclude certain transactions).
- 7.3. Reporting institutions are expected to comply with the reporting instructions determined by the SARB. The SARB may conduct an ad hoc audit of the controls implemented by reporting institutions to assess their adequacy in ensuring that the data supplied to the SARB on a daily basis comply with specified standards. Reporting institutions that are non-compliant will be required to implement corrective measures. However, an infringement procedure may be initiated against a reporting institution which repeatedly fails to adhere to the reporting standards.

8. Review of methodology

- 8.1. The SARB will periodically review the methodology of each benchmark with a view of ensuring that its integrity and representativeness is consistent with the underlying interest that it aims to measure. Subsequent to a review, the SARB may deem it necessary to introduce various amendments to the existing methodology.

- 8.2. Should such methodology amendments be deemed material, the SARB will follow a predetermined procedure, which may include consultation with the public and the oversight function for the benchmarks administered by the SARB. The SARB will provide the rationale for the proposed changes and, where possible, will indicate the impact thereof.
- 8.3. Judgement regarding the materiality of a change is largely subjective. A change in either the statement of underlying interest or the calculation methodology may be material and may therefore require the predetermined procedure for material changes to be followed.
- 8.4. The SARB will publish any and all changes to a methodology regardless of their materiality, in an advance notice, prior to effecting such changes.

9. Publication

- 9.1. The benchmarks will be published, on the SARB's website (www.resbank.co.za), every South African business day at 10:00.
- 9.1.1. With each benchmark determination and for each tenor, the SARB will publish the following related information:
- a) the headline rate and the nominal value of the transactions underpinning the benchmark;
 - b) the rate and the nominal value of the transactions of each type of counterparty category, as per the benchmark's statement of methodology (where applicable);
 - c) the rate and the nominal value of the transactions occurring at the 10th and 90th percentiles; and
 - d) the calculation method (i.e. whether calculated in the 'normal' or 'contingency' mode).
- 9.2. All published rates will be rounded off to three decimal places.

- 9.3. Should the SARB be unable to publish at the prescribed time, it shall inform the public to that effect with a notice on its website and on the newswires, and will provide an estimated publication time. The delayed publication time shall be limited to the same window during which republication is allowed as per the republication policy, failing which a contingency arrangement shall be triggered.

10. Access

- 10.1. The use of SARB-administered benchmarks is free of charge. Therefore, it is not subject to a licence agreement between the user and the SARB, nor between the user and any agent to which the SARB may delegate some or all of its responsibilities pertaining to the determination of these benchmarks.
- 10.2. In line with the publication policy, all SARB-administered benchmarks will be made available on the official website of the SARB (www.resbank.co.za) at the stated times, as well as via the SARB online statistical query.

11. Error-handling policy

- 11.1. In the event that an error is discovered after the publication of a benchmark rate at 10:00, and if such an error pertains to the calculation process or to the transaction data supplied to the SARB, the benchmark rate may be republished at any time before 12:00 in South African time. The publication of the rate will be accompanied by a footnote that states whether the rate was revised, calculated on reduced volumes or whether it was the previous day's rate.
- 11.2. The magnitude of the error must be at least two basis points to warrant a republication of the benchmark rate. The criteria for republication will be reviewed periodically and may be amended based on market conditions. Nonetheless, the SARB will publish a summary report of all the errors that occurred during the calculation process, and their impact. This will include

both the errors that met the threshold for republication and those that did not. The report on the errors will be published monthly.

12. Oversight function

- 12.1. The SARB's Reference Rate Oversight Committee (RROC) is responsible for the oversight of SARB-administered benchmarks and compliance with the terms and conditions of the applicable Codes of Conduct and Operating Rules. The RROC consists of the SARB Deputy Governor responsible for financial stability and representatives from the Prudential Authority, the Financial Sector Conduct Authority, as well as the Financial Stability Department and the Financial Markets Department of the SARB.
- 12.2. The governance process for the determination of benchmarks outlines the responsibilities of the SARB and sets out procedures for dealing with disputes lodged and queries raised relating to the determination of these benchmarks. Regular audits are conducted on the benchmark determination processes applied by the SARB.

13. Contact and queries

- 13.1. Complaints and queries on any aspect of benchmark administration may be sent to sarb-benchmarks@resbank.co.za. The Senior Manager in charge of benchmark administration at the SARB is obliged to address the complaint or query within five business days, and to take the necessary steps to resolve it.

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