The New EGP Risk-Free Rate Benchmark Terms of Reference

Cairo Overnight Index Average "CONIA"

1. Introduction

This document constitutes a benchmark proposal (the "**Proposal**") in respect of the new EGP risk-free rate benchmark (the "**Benchmark**"). It comprises information concerning the Benchmark definition, calculation, publication and governance.

This Proposal is made available by EBRD and the Central Bank of Egypt in its capacity as the Benchmark administrator (the "**Administrator**").

This Proposal is subject to the approval of the money market contact group participants (the "**Participants**"). Once this Proposal is validated, it becomes automatically the Benchmark Terms of Reference.

2. Official Appellation

After consultation with the Participants, the **Administrator** has decided to give the nameof "CONIA" for the below described EGP risk-free rate benchmark.

3. Definition

After several meetings, the money market contact group participants have chosen the EGP unsecured interbank overnight rate as the risk-free rate benchmark in Egypt. This benchmark is a measure of the rate at which Egyptian banks lend and borrow from each other in EGP in circumstances where credit, liquidity and other risks are minimal.

On each Cairo business day (the "**Fixing Day**"), the Benchmark is measured as the trimmed mean, rounded to three decimal places, of interest rates paid on eligible EGP denominated deposit transactions.

The trimmed mean is calculated as the volume-weighted mean rate, based on the central 70% of the volume-weighted distribution of rates.

Eligible transactions are:

- Reported by the Egyptian Banks to the Central Bank of Egypt DMMS System and on Refinitiv dealing system;
- Unsecured overnight;
- Executed between 8:30 hours and 16:30 hours Cairo time and settled that same-day(working hours of the bank to bank window on CBE's RTGS system);
- Greater than or equal to EGP 50 million in value.

4. The Calculation Methodology

1) The CONIA Benchmark is calculated by the Administrator as follows:

a) All eligible transactions traded on any given Fixing Day are ranked from the smallest to the largest with respect to the nominal interest rate reported on these transactions.

b) All the transactions with the same nominal interest rate are merged in order to have one line per nominal interest rate. Each rate is associated with the cumulative traded volume.

c) The top and the bottom 15 percent of the traded volumes (associated to the highest and the lowest interest rate) are detected as outliers and removed from the observations.

d) The Benchmark is calculated as the volume weighted mean of the remaining sample as follows:

$$\text{Benchmark} = \sum_{i=0}^{n} (R_i * V_i)/V$$

Where:

Ri is the umpteenth interest rate;

Vi is the volume corresponding to the rate Ri;

V is the total volume used for the calculation (sum of Vi).

e) The Benchmark rate is reported in percentage per annum (on an actual/360-day countconvention).

5. CONIA Compounded Rates

In addition to the CONIA O/N rate, three CONIA compounded rates are calculated and published on every CAIRO business day.

The new CONIA compounded rates referred to as “30-day Compounded CONIA”, “90-day Compounded CONIA” and “180-day Compounded CONIA” and are to be calculated by compounding the CONIA over the X-day reference period. Simple interest applies to any day that is not a business day, using a rate of interest that is equal to the CONIA value for the preceding business day.

a) For each X-day reference period, the CONIA compounded rate is to be calculated as :

$$\text{CONIA X} - \text{day Compounded Rate} = [\prod_{i=1}^{d_b} \left(1 + \frac{CONIA_i \times n_i}{360}\right) - 1] \times \frac{360}{T}$$

Where:

$CONIA_i$ is the CONIA rate applicable on business day i

n_i is the number of calendar days for which $CONIA_i$ applies (often 1 day, or 3 days for typical weekend)

T is the number of calendar days in the reference period (that is, 30-, 90-, or 180-calendar days)

d_b is the number of business days in the reference period,

b) The CONIA compounded rates are published as percentages rounded to the fourth decimal place.
c) The CONIA compounded rates for a given publication date incorporates all the CONIA values starting exactly 30-, 90-, and 180-calendar days before the publication date, regardless of whether or not that date is a weekend or holiday, and extend through the CONIA published that day. In order to preserve the fixed-day count structure, the CONIA compounded rates is assigned the CONIA value from the preceding business day when the start date of a given tenor falls on a weekend or a holiday. For example, if the start date falls on a Friday, the CONIA for the preceding Thursday would be applied for 2 calendar days (Friday and Saturday). If the start date falls on a Saturday, the CONIA for the preceding Thursday would be applied for 1 calendar day (Saturday).

6. CONIA Index

The CONIA Index measures the cumulative impact of compounding the CONIA on a thousand unit of investment over time, with the initial value set to 1000.00000 on 02 01 2017.

Specifically, the CONIA Index is calculated as follows:

$$\text{CONIA Index}_{\text{dd/mm/yyyy}} = 1000.00000$$

$$CONIA\ Index_T = 1000.00000 \times \prod_{i=1}^{T}\left(1 + \frac{CONIA_i \times n_i}{360}\right)$$

Where:

$CONIA_i$ is the CONIA rate applicable on business day i

n_i is the number of calendar days for which $CONIA_i$ applies (often 1 day, or 3 days for typical weekend)[1]

To Calculate the CONIA Compounded Rate for any reference period, market participants are expected to use the below formula to derive it from the Calculated CONIA Index.

$$\text{CONIA Term Rate}_{Period} = \left[\frac{\text{CONIA Index}_{\text{End Period}}}{\text{CONIA Index}_{\text{Start Period}}} - 1\right] \times \frac{360}{T}$$

Where T is the number of calendar days in the interest period

7. Publication

For a given Cairo Fixing Day,

- The CBE as administrator publishes the calculated Benchmark rate, the Compounded Rates, and the Index on its web page by maximum 10:30 hours Cairo time on the following Cairo business day.

[1] The underlying CONIA O/N rate used to calculate the published CONIA Index is the full CONIA rate with up to 8 decimal points.

- The CBE as the administrator publishes the calculated Benchmark rate, the Compounded Rates, and the Index on Refinitiv and Bloomberg. Please refer to the CBE website for more details about the page and ticker/logical record under which the rates are published.
- After publication, the Benchmark rate is final and any change is prohibited. However, CBE recognizes that errors may occur in limited circumstances. If, on a given day, the re-calculated Benchmark rate based on the updated data is three or more basis points (>0.03%) away from the Benchmark rate published at 10:30 hours, the Benchmark rate, the Compounded Rates, and the Index will be republished for that day (no later than 16:00 hours, with a reference to the 'Recalculated' status).
- CBE only publishes the CONIA O/N Benchmark, the Compounded Rates, and the Index once for a given day.

Alongside the headline rate, Compounded Rates, and Index the following information is also published:

- Aggregate volume of eligible transactions in millions of EGP after trimming outliers.
- CONIA O/N historical level and volume for each Cairo business day.
- CONIA Compounded rates and CONIA Index historical levels for each Cairo business day.

8. Data

- Transactions are extracted from the Refinitiv dealing system database and the CONIA O/N rate, trimmed volume, compounded rates, and Index are automatically calculated using the Refinitiv risk free rate spreadsheet. All transactions & results are reviewed by the market team.
- The transactions are also reviewed against the transactions reported by the banks on the DMMS reporting system to the CBE.
- Data from DMMS are reported and extracted as following:
    - Banks report their transactions daily from 12:00 hours to cut- off time 18:00 hours as XML Spreadsheet files, on the same working day conducted.
    - The file contains the following data for each transaction: Lender Bank ID, Borrower Bank ID, Amount, Interest rate, Maturity Date, Number of Days, Transaction Type ID. Transaction Type can be: Overnight, Less than a Week, Week, Less than a Month, Month, More than a Month.
    - Details of each transaction are matched from the data files of both the Lender and theBorrower bank.
    - All banks are required to report on the DMMS. Banks that have no transactions mustreport an empty file.
    - Banks can review and confirm data files up to 08:30 hours on the next working day. No review and confirmation can take place until all banks have reported their files.
    - After all banks confirm their data files, the working day is closed and reports are available.

9. Contingency Plan

The Administrator will consider that the data submitted by the reporting banks on a given day are sufficient to calculate the Benchmark rate unless:

- The total number of eligible transactions is below 5,
- or the total number of reporting banks is below 5 or the number of different borrowing banks is below 2,
- or the total volume of the eligible transactions is below EGP 500 million.

In case one of the above data insufficiency conditions is met, the Benchmark rate will be determined as: the level of the CBE Overnight Deposit rate plus the mean of the spread of the Benchmark to CBE Overnight Deposit rate, over the previous five publication days.

In the event that the contingency methodology is used, this will be clearly indicated on the CBE web page, Refinitiv and Bloomberg.

This methodology is only intended to be used for relatively short-term contingency events. If such an event was expected to be prolonged, the CBE would consider the appropriate response at the time, with reference to the review and evolution process outlined in Section 8.

10. Review and evolution of the methodology

The CBE reviews, at least annually, the current methodology with a view to ensuring that it continues to adequately measure the underlying interest. However, upon launch, first review will be conducted after three months.

In doing so, the CBE will review conditions in the relevant market in order to assess whether the market has undergone or is undergoing structural change that may warrant changes to the benchmark methodology. In particular, the CBE will seek to determine whether the relevant market continues, and is expected to continue, to function sufficiently well and have sufficient volumes to form the basis for a robust and credible benchmark.

The CBE will also take account of representations from users of CONIA and the Money Market Contact Group participants to assess the need for changes in the methodology.

If the CBE determines, on the basis of its review, that changes to the benchmark methodology are warranted, it may make such changes after consultation with the Money Market Contact Group participants.