

Armenia Money Market Working Group

May 2019



European Bank
for Reconstruction and Development

- Review and approval of the minutes of last meeting.
- Approval of Term of Reference for the Money Market Working Group.
- Introduction of the assessment of AMD RFR candidates.
- Figuring out the most acceptable AMD RFR candidate according to the assessment.
- Suggesting action plan for the next move.
- Presenting EBRD courses in other countries, discussing training model in Armenia.
- Presentation by AMX on their vision on benchmark rates in Armenia

Proposed ToR CBA Money Market Contact Group

CBA MMCG

The CBE's MMCG is a forum for interaction between CBE and industry-wide market professionals involved in the Moroccan money market whose mission is to aim for Safe and Efficient Money markets

Objective

- Discuss developments in money markets.(functioning, practices, structural and regulatory trends, impacts of CBE market operations)
- Recommend and catalyse developments to support the Mission

Governance

- Chaired by Industry
- Banking-Sector participants
- Money Market Experts.
- CBA provides the secretariat, proposes the agenda and participates in the discussions

Procedures

- X Meetings per year.
- Established agenda by the Chair.
- Members are encouraged to propose topics.

Background

- ▶ importance of money markets (and money market benchmarks)

Purpose

- ▶ aim for safe and efficient AMD money markets - catalyse developments

Governance and membership

- ▶ Members, chair, secretariat, votes

Operation

- ▶ recommendations are intended to reflect, represent and influence market opinion as it works towards its **objective of catalysing developments**
- ▶ Possibility of sub-groups or sector-specific forums

Procedures

- ▶ Number of meetings per year
- ▶ Transparency

Suggested timeline for AMD benchmark reform

- Immediate objectives:

Select and define the AMD RFR

- Review potential alternatives
- Assess candidate Overnight Risk Free Rates (data input and calculation methodologies)
- Define the Overnight RFR benchmark methodology

- Intermediate objectives:

Adoption and use of the overnight RFR:

- Raising awareness and educating users as to the need to using the Overnight RFR by proactively engaging with the wider market
- Identifying best practices for references to the Overnight RFR in financial contracts, coordinating, as necessary, with those that have the authority to amend template documentation.
- Developing recommendations for the design and promoting the use of new financial products referencing the overnight RFR which best meet the needs of a broad set of market participants.
- Identifying potential impediments to the adoption of the overnight RFR and proposing workable solutions

Develop a term reference rate:

- Identify and review potential data inputs and calculation methodologies for term reference rate
- Agree design criteria for potential administrators and data providers to develop term reference rates, as appropriate.

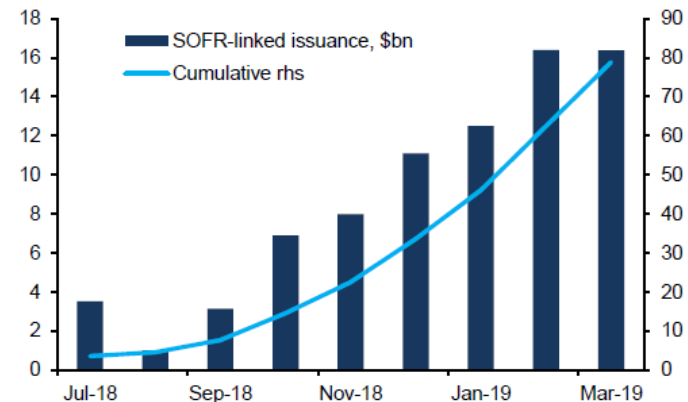
- Permanent objectives:

On-going review existing benchmarks on a regular basis to ensure they are still correctly reflecting the underlying interest

Discuss matters related to money market indices

USA:

- SOFR first publication on 3/4/18
- First bond issuances from July 2018



Russia:

- RUONIA first published in 2010
- ROISFIX in 2011
- Loans, bonds and swap transactions subsequently got indexed to these benchmarks.

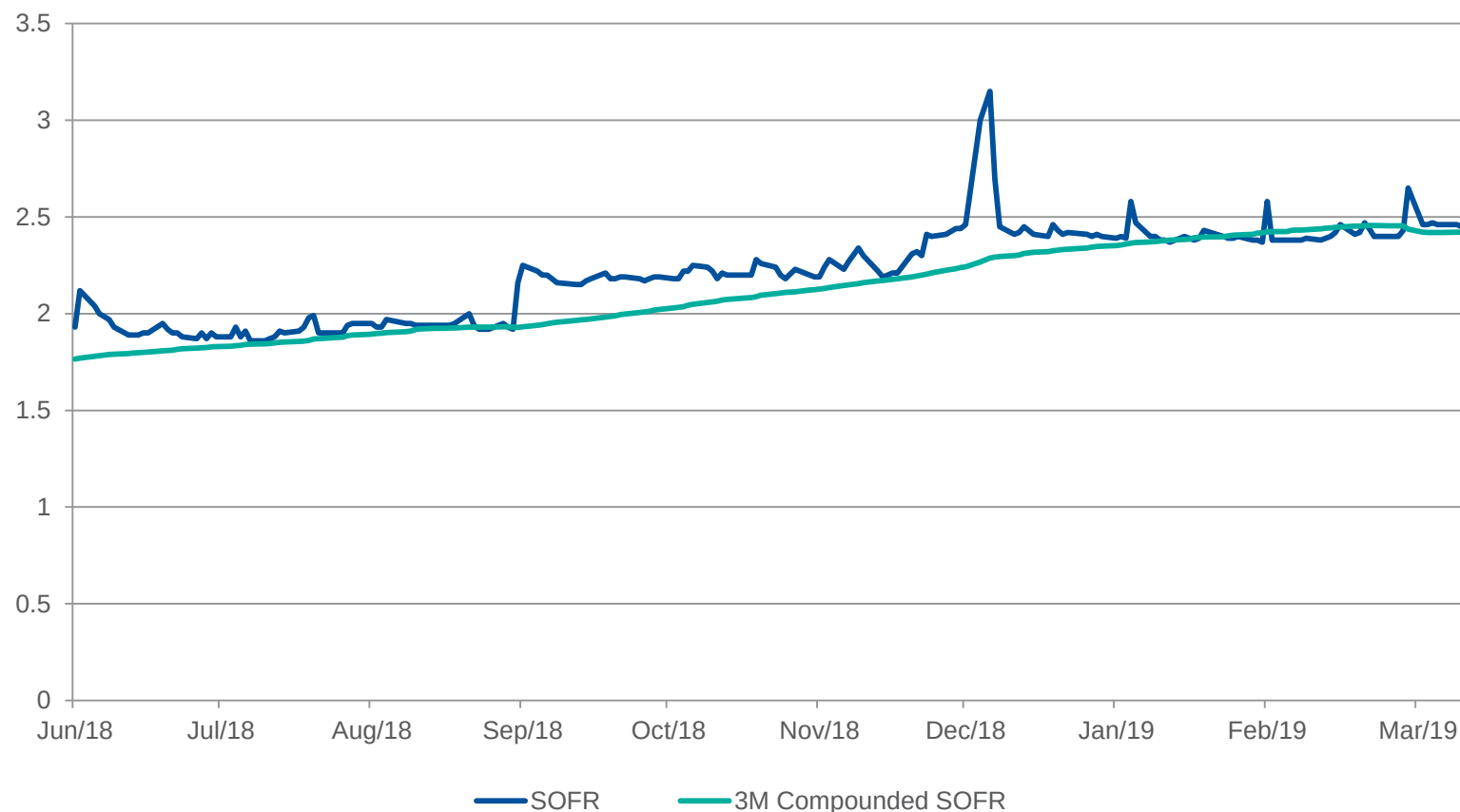
Georgia:

- Reformed TIBR launched on 1 August 2018
- EBRD executed first OIS on 10 and 11 October 2018
- The NBG started on 15 March publishing the term TIBR rates
- EBRD issued on 22 March first GEL denominated bond indexed to TIBR.
- EBRD extended on 10 April its first GEL denominated loan bond indexed to TIBR.

SOFR example

SOFR, a volatile index?

... actually not when compounded



Guiding principles for a reliable Money Market benchmark rate



European Bank
for Reconstruction and Development



Some considerations for RFR

Guiding principles for a reliable MM interest rate benchmark

Reflecting a tradable underlying by market participants

Expressive of the policy target of the Central Bank

Transparent definition that is robust to adverse changes in market structure

Minimal opportunities for market manipulation

Appropriate Governance

Conducive to building a term extension and curve

- RFR adopted in G7 currencies all based on actual transactions
- Secured vs unsecured traded volumes
- What segment of the market (eg Sonia interbank, Ester borrowing cost for banks from all sources)

... but can be secured even if operational target unsecured (and vice versa) e.g. SOFR
Are secured rates more volatile than unsecured and what do market participants and end users prefer to use as a reference?

- To be defined by the Administrator (with market participants)
- Market needs to be comfortable can use benchmark for long term transactions => important consideration when deciding for secured vs. unsecured

- Underlying volumes
- Transparent contributions
- Calculation methodology (exclude extremes?, exclude trades with some counterparties? Fall-backs?)

- Who will be the Administrator?
- Does the Administrator need to be approved by some parties using the benchmark? (e.g. European Benchmark regulation)
- Frequency and rules for review

- Develop an IRS / OIS market
- Discussion on Term fixing

Guiding principles for a reliable Money Market benchmark rate



European Bank
for Reconstruction and Development

G7 assessment criteria example - €

Focus of
last and
today's
WG
meeting

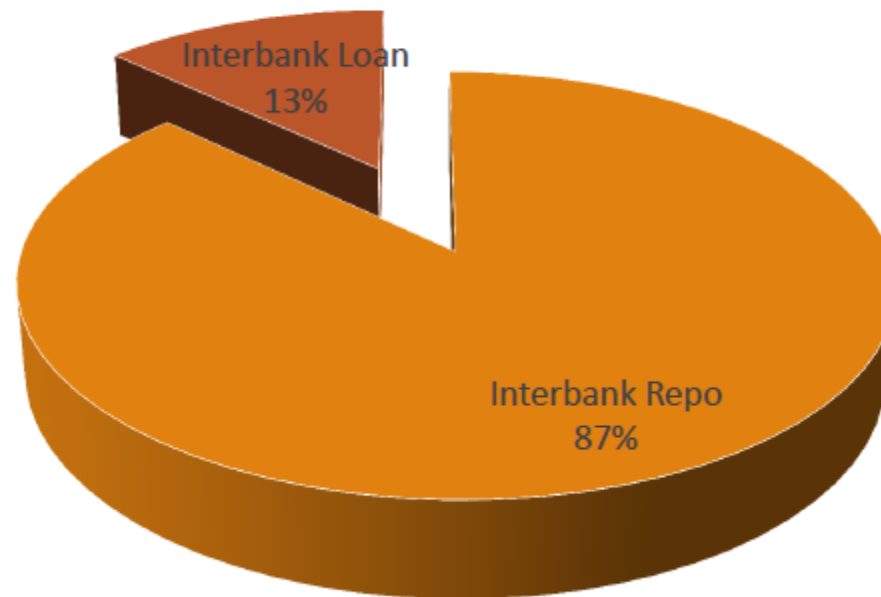
Criteria for a euro risk-free rate

1. Benchmark qualities
 - (a) Underpinned by broad-based and reliable market data
 - (b) Representative of competitive arm's-length near risk-free bank borrowing costs
2. Benchmark characteristics
 - (a) Sensitive and reactive to changes in policy rate and other market factors
 - (b) Underlying interest that the benchmark seeks to measure to be clear and transparent
3. Methodological qualities
 - (a) Market data to be transaction data where possible
 - (b) Market data clearly defined and understood
 - (c) Market data reliable and easily accessible to administrator
 - (d) Determination methodology clear and transparent
4. Governance and accountability
 - (a) Administrator compliant with the International Organization of Securities Commissions (IOSCO) Principles* and expected to become compliant with the EU Benchmarks Regulation (authorised/registered/exempt)
 - (b) Appropriate controls and oversight, including confidentiality of data
5. Other considerations
 - (a) Potential for transition to market based on risk-free rate
 - (b) Availability of historical risk-free rate data

Next WG
focus

Source: Working group on euro risk-free rates.
* "Principles for Financial Benchmarks", IOSCO, July 2013.

Interbank repo and loan market structure



Question 1

Questionnaire 1



European Bank
for Reconstruction and Development

Rate	Known Advantages	Known Disadvantages	RFR Candidate ?
Secured (Repo) Traded rate	- Less dependent on outliers; more stable & hardly be interrupted during shocks - Closest for being risk free, minimal (or no) credit risk - Transaction based, biggest volumes in the Armenian market, more frequent transactions, highly correlated with the monetary policy - If it is with CBA, standing facility instrument is always available for banks without any amount limits	- Does not reflect the real cost of AMD borrowings; reacts to small short term rate fluctuations, but may be immune to large changes in cost of unsecured, real funding. - It can be affected by the risks associated with the underlying security, e.g. availability, quality and liquidity. - The default risk of the secured trade. - Backward-looking, Terms are only near 7 days - Dependence on Central Bank repo, one day window in Wednesdays, problem with inclusion of intrabank deals	Alternatives offered by the banks are as follows: - The Repo Market Average Rate (on particular week-day /Wednesday/ or for period /Tuesday to Thursday/) - Average of all repo market (interbank, intrabank and those with the CBA) transactions, as long as they are secured. - CBA Lombard Repo Rate - Only interbank repo rate

Question 1

Questionnaire 1



European Bank
for Reconstruction and Development

Unsecured Traded rate	- Reflect the real cost of funding and systemic liquidity problems; - It gives an opportunity to get money quickly, which can maximize the efficiency of the operations. - Transaction based, correlated with the monetary policy	- Hard to calculate, non-representative data and higher counterparty risk - The rate is higher, more volatile and the volume is smaller compared to the secured (repo) market. - Significant credit risk, few participants, not frequent trades and possible market manipulations	Alternatives offered by the banks are as follows; - Interbank unsecured market, or banks' deposit rate - The Average Unsecured Money Market Lending Rate (on particular week-day /Wednesday/ or for period /Tuesday to Thursday/) - Short-term government debt rates
---	---	---	---

Question 1

Questionnaire 2 - Assessment of RFR candidates



European Bank
for Reconstruction and Development

Assessment of the candidate Risk Free Rates	Unsecured O/N Rate				Secured Rate			
	Meets Criteria	Partially meets criteria	Does not meet criteria	Unclear	Meets Criteria	Partially meets criteria	Does not meet criteria	Unclear
1 - Quality of the benchmark and methodology								
a. Existence of sufficient and reliable market data to produce a robust and reliable index (quantity, quality, availability of data for the administrator)	11%	44%	11%	33%	56%	33%	0%	11%
2 - Sensitivities								
a. Credit premia	0%	38%	25%	38%	38%	38%	13%	13%
b. Liquidity premia	25%	38%	13%	25%	38%	50%	0%	13%
c. Can be easily replicated by market participants	0%	63%	13%	25%	50%	38%	0%	13%
d. Technical effects (Period-end, Availability of collateral,...)	38%	25%	25%	13%	33%	22%	44%	0%
e. Proximity to policy rate (Monetary policy target)	44%	33%	11%	11%	78%	22%	0%	0%
f. Regulatory change	22%	33%	11%	33%	56%	22%	0%	22%
g. Changes in the monetary policy framework	44%	11%	11%	33%	56%	22%	0%	22%

Question 1

Questionnaire 2 - Assessment of RFR candidates



European Bank
for Reconstruction and Development

Assessment of the candidate Risk Free Rates	Unsecured O/N Rate				Secured Rate			
	Meets Criteria	Partially meets criteria	Does not meet criteria	Unclear	Meets Criteria	Partially meets criteria	Does not meet criteria	Unclear
3 - Other considerations for adoption/transition								
a. Ease /low cost of implementation	44%	22%	11%	22%	44%	33%	0%	22%
b. Already used by the market as a benchmark	0%	11%	56%	33%	11%	56%	22%	11%
c. Reflect market funding rate during normal and market stress situations	22%	33%	33%	11%	33%	44%	11%	11%
d. Same day availability (e.g. at close of business)	25%	38%	25%	13%	38%	38%	13%	13%
e. Ease of building a term curve extension	0%	22%	56%	22%	25%	50%	13%	13%
f. Consistent with RFRs chosen for other currencies	22%	33%	11%	33%	33%	22%	33%	11%
g. Accepted internationally	11%	33%	22%	33%	22%	22%	44%	11%

Consultation Questions

Question 1 : Based on those criteria, could you **please fill the two questionnaires**

Question 2 : Which of the unsecured and secured rate best reflects your cost of funding in AMD ?

Except for two banks, respondents think that **secured rate** best reflects banks' cost of funding in AMD. For two banks, the interest rate on time deposits is a better reflection of the cost of funding in AMD.

Question 3 : Based on the above, which rate is your preferred RFR?

- Three banks prefer interbank repo rate as the RFR.
- Two banks prefer unsecured rates interbank lending rates (one mentioned 'or deposit rates).
- Two banks propose RFR to be linked to the rates on CBA's interest rate corridor;
- One bank prefers the refinancing rate,
- One bank prefers the Lombard repo rate.

Consultation Questions

Question 4 : Are there are any technical aspects of the underlying repo market that would need to be taken into account while calculating a benchmark index and improving the underlying market?

- Two banks think that it would be wise to include CBA's repo operations into any index calculation based on the repo market.
- One bank is opposing to the inclusion of intrabank repo market to any index calculation,
- Another bank agrees with the inclusion of intrabank repo market into index calculation if and only if a sound methodology is adopted.
- Only two banks regard lack of a standard master agreement , absence of a trading platform and non-existence of market makers as essential impediments to the development of a benchmark index.

Question 5 : In your view, what can be done to incentivise banks to trade more among themselves in the interbank market as opposed to facing the CBA?

The banking system operates under liquidity deficit (and local banks have to fulfill HCY reserve requirements in AMD) and, as a result, banks heavily rely on CBA's repo operations + Small counterparty limits across banks also act as an impediment to the development of the money market.

- Two banks suggested reduction of the frequency of CBA repo operations.
- One bank suggested a single trading platform
- Introduce a cap on maximum repo offered by the CBA to any single bank?
- One bank proposes the introduction of a CCP as a remedy for lack of sufficient credit limits across banks

Consultation Questions



European Bank
for Reconstruction and Development

Question 6: Are you content with a 7 day market?

Banks seem to be content with the 7-day market (although 7-day market is a natural result of CBA`s main operations).

- One bank is not content with 7-day market and evaluates that having a variety of tenors (ranging from O/N to 3-6 months) would improve the price discovery and provide banks with more flexibility.
- One bank raised concern on the concentration of the market on overnight tenor due to intricate procedures related to trade execution and settlement.

Question 7: In what specific transactions do you think the RFR can be applied?

Banks generally find RFR suitable for floating rate loans to their retail clients (e.g. mortgage and business loans), interest rate swaps and FRNs.

- One bank evaluates that indexing floating rate loan agreements to the new benchmark may create difficulties due to possible mismatches between the benchmark rate and the actual cost of funding.

Question 8: Do you have any additional comment on this assessment?

Responses from two banks;

- ‘What about a RFR in foreign currency? 60% of our balance sheets are in FC. We use Libor as a RFR, which has serious drawback for us, because does not reflect the change in liquidity and credit premiums in Armenia’.
- ‘We had a feeling that 1-week repo rate is already a made choice, and we are now discussing ways to improve further.’

Next step once RFR agreed - Proposed index methodology



European Bank
for Reconstruction and Development

Contingency Plan

Data collection



Calculation



Publication



Review and Evolution of the Methodology

EBRD has typically run courses on:

- Treasury and Funds Transfer Pricing (FTP)
- Derivatives
- Asset & Liability Management

Courses:

- Generally last 2 full days.
- Delivered as combination of lectures, class discussion, case studies, individual and team exercises.
- Addressed to market participants such as bank managers and Treasury employees.

Treasury and Funds Transfer Pricing (FTP) Course

This training course is designed to provide attendees with the tools needed to properly implement and govern FTP strategy.

Typical sessions include:

- Role of Capital
- Standardised Methodology for Credit Risk
- Internal Rating Based (IRB) Approach for Credit Risk
- Market Risk
- Liquidity Risk
- Interest Rate Risk in the Banking Book (IRRBB)
- Overview of Funds Transfer Pricing (FTP)

This training course aims to investigate the pricing and use of a range of derivatives.

Typical sessions include:

- A general introduction to derivatives
- FX forwards and swaps
- Interest rate forwards and futures
- Interest rate swaps
- Credit derivatives
- Options

This course is designed to give participants a comprehensive understanding of the key practical aspects of Asset and Liability Management in banks.

Typical sessions include:

- Asset & Liability Management Primer
- Liquidity Risk Management
- Capital Adequacy and the Internal Capital Adequacy Assessment Process (ICAAP)
- Interest Rate Risk in the Banking Book
- Structural Foreign Currency Exposure
- Best Practice Governance and the Asset & Liability Committee (ALCOM)



European Bank
for Reconstruction and Development

AOB on AMD Money Markets and Q&A



European Bank
for Reconstruction and Development

ANNEXES

Reformed SONIA key features



European Bank
for Reconstruction and Development

Definition of SONIA

The definition of SONIA has two elements:

(i) Statement of underlying interest:

SONIA is a measure of the rate at which interest is paid on sterling short-term wholesale funds in circumstances where credit, liquidity and other risks are minimal.

(ii) Statement of methodology

SONIA is measured as the volume-weighted mean rate, based on the central 50% of the volume-weighted distribution of rates, paid on eligible sterling denominated deposit transactions.

Review and evolution of the methodology

➤ Periodic review of the methodology

The Bank periodically reviews the current methodology with a view to ensuring that it continues adequately to measure the underlying interest.

➤ Changes to methodology

If the Bank determines, on the basis of its review, that changes to the benchmark methodology are warranted, it may make such changes.

Such changes may include, for example, refinements to the calculation methodology or scope of eligible transactions within the relevant market. They may also include the introduction of a methodology which has reference to other actively traded money market instruments, for example UK-gilt collateralised repurchase agreements, or to the Bank of England official interest rates, so long as the Bank considers that they provide an appropriate measure of the underlying interest.

Reformed SONIA key features continue

SONIA republication policy

➤ SONIA will be republished on a given day if the calculation of the benchmark based on the most up-to-date data is two or more basis points away from the earlier published rate. Republication will be no later than midday on the same day, but the Bank would republish earlier if ready to do so. The Bank will only republish SONIA once for a given day.

➤ No amendments after republication deadline will be made to the benchmark rate under any circumstances

Short-term contingency arrangements

The Bank will consider that the data submitted via its Sterling Money Market daily data collection are sufficient to produce SONIA unless:

- five or more reporters in the unsecured population have failed to submit a valid file; and
- the volume of SONIA-eligible transactions is <70% of the mean of the previous five business days for which SONIA has been calculated in line with the statement of methodology.

If these data sufficiency conditions are not met, SONIA will be determined as:

- The level of Bank Rate plus the mean of the spread of SONIA to Bank Rate over the previous five publication days, excluding the days with the highest and lowest spread to Bank Rate. For these purposes the relevant level of Bank Rate is that at the close of the SONIA transaction window.



This information is provided for discussion purposes only, may not be reproduced or redistributed and does not constitute an invitation or offer to subscribe for or purchase any securities, products or services. No responsibility is accepted in respect of this presentation by its author, the European Bank for Reconstruction and Development (the "Bank") or any of its directors or employees (together with the author and the Bank, the "EBRD") for its contents. The information herein is presented in summary form and does not attempt to give a complete picture of any market, financial, legal and/or other issues summarised or discussed. The EBRD is not acting as your advisor or agent and shall have no liability, contingent or otherwise, for the quality, accuracy, timeliness, continued availability or completeness of the information, data, calculations nor for any special, indirect, incidental or consequential damages which may be experienced because of the use of the material made available herein. This material is provided on the understanding that (a) you have sufficient knowledge and experience to understand the contents thereof; and (b) you are not relying on us for advice or recommendations of any kind (including without limitation advice relating to economic, legal, tax, regulatory and/or accounting risks and consequences) and that any decision to adopt a strategy, deal in any financial product or enter into any transaction is based upon your own analysis or that of your professional advisors, whom you shall consult as you deem necessary.