

Armenia Money Market Working Group

February 2019



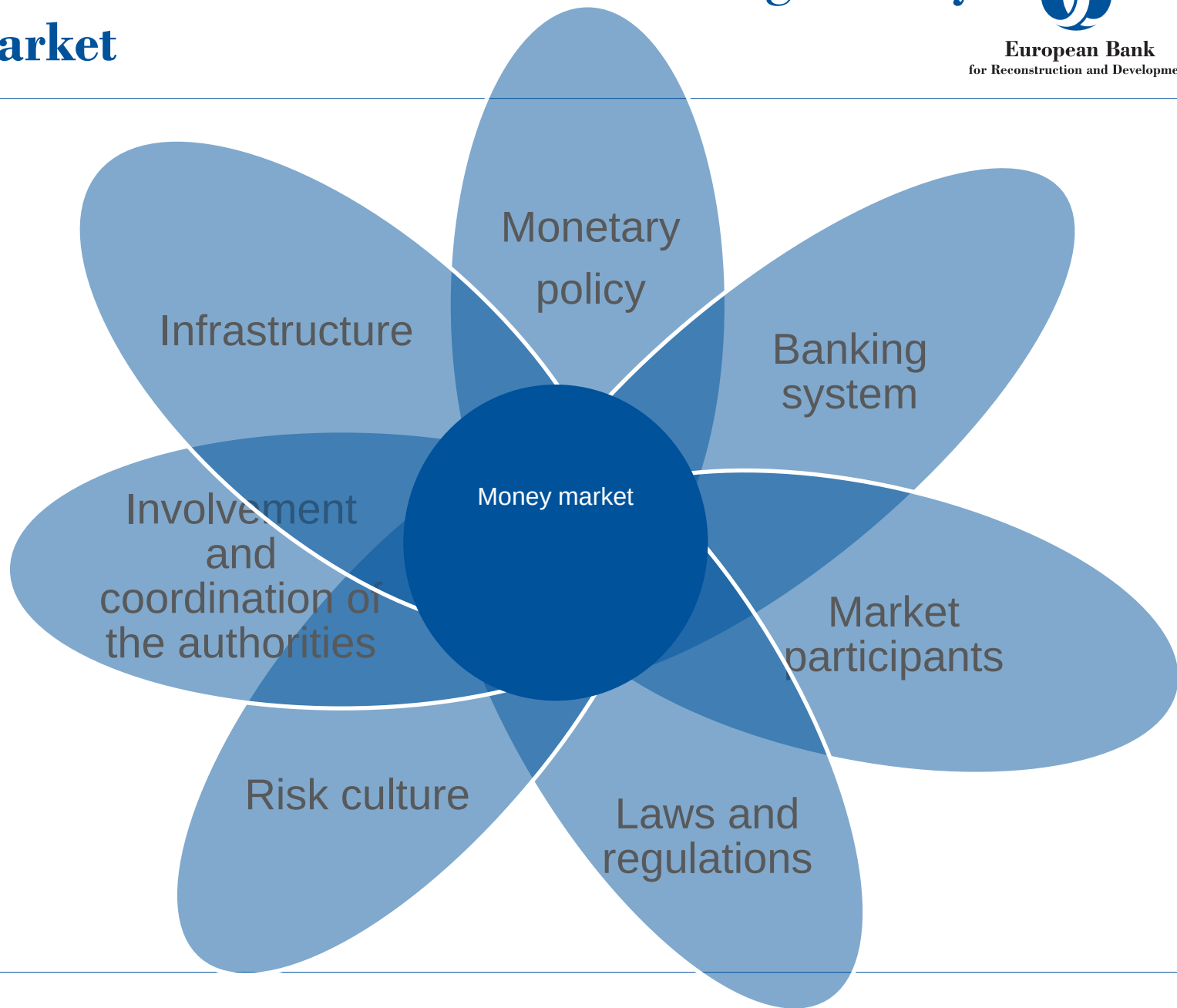
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- Main messages from last meeting
- Review and approval of minutes of last meeting
- Terms of reference for the Money Market Contact Group
- Decision/vote for the Chair of next WG meetings and on term for the rotation
- Suggested timeline for the MMCG
- Preliminary assessment of AMD RFR candidates
- Presentation of questionnaires to be filled by participants for next meeting on assessment of AMD RFR candidates
- AOB on AMD money markets
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Preconditions for a well functioning money market



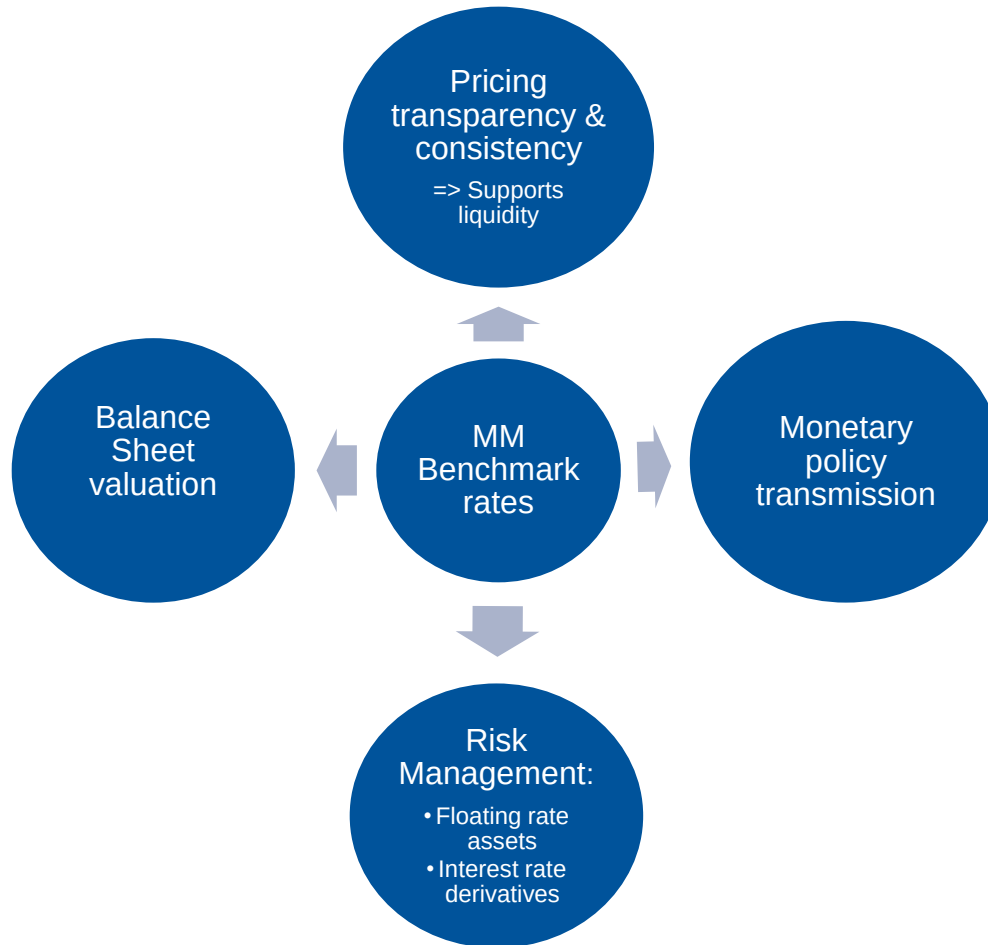
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Importance of Money Market Benchmarks



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Support development of longer term and more flexible financing to economy at more efficient prices

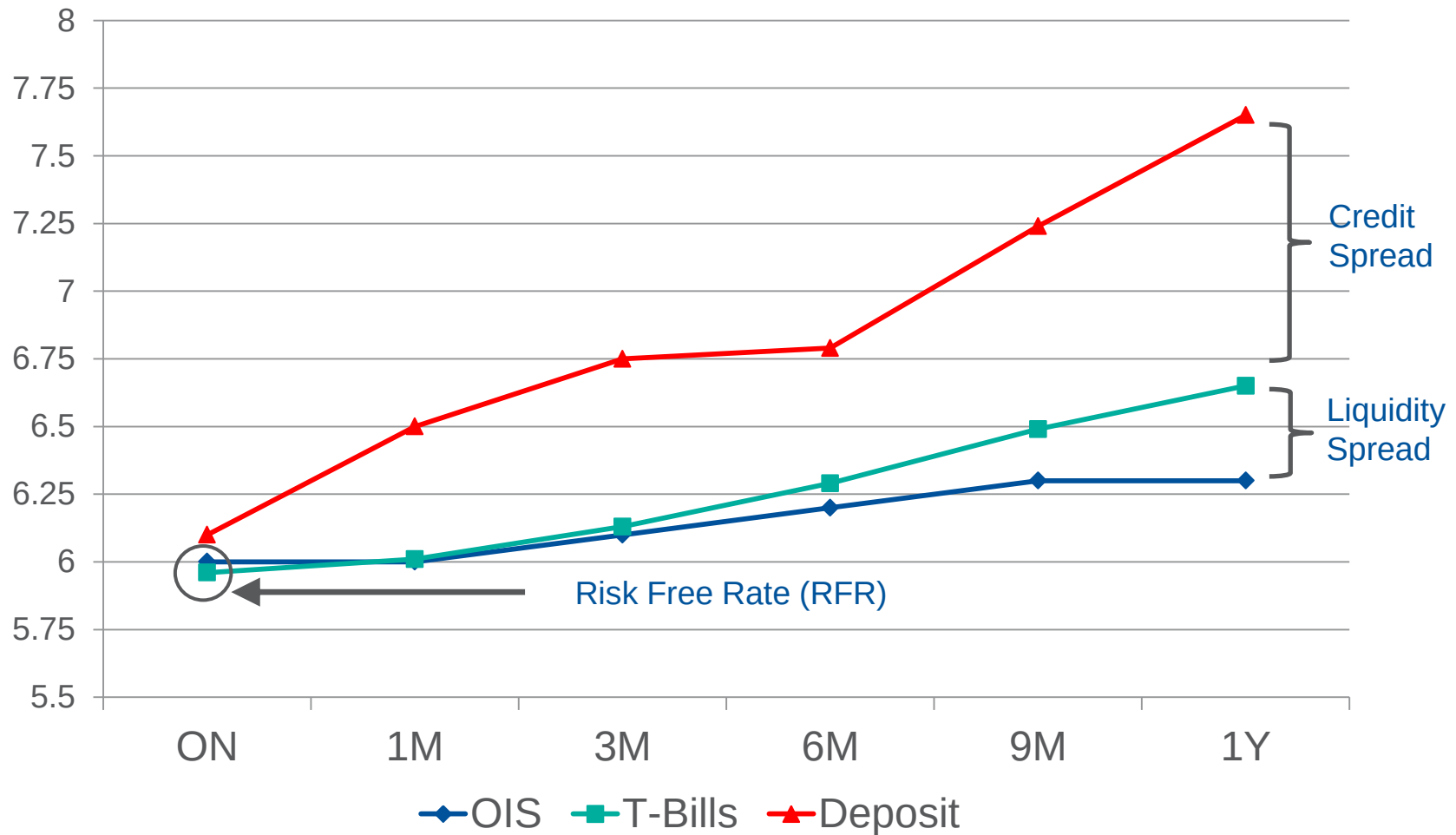
Best practices

How do benchmarks support better risk management?



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- Manage interest rate risk in more efficient manner:
 - reduce or increase exposure to fluctuations in interest rates
 - or obtain a marginally lower interest rate than would have been possible without the swap (gives access to wider range of counterparties and allows to reduce risk premium for taking interest rate risk that cannot be managed)
- Improve domestic interest rate risk allocation (transfer between market players)
- Support capital market development (supports increased liquidity and lower risk premium)
- Means to reduce all-in funding cost for borrowers
- Derivatives are efficient in terms of credit and capital charges (more efficient than using cash instruments or balance sheet adjustments)
- Managing interest rate risk with Interest Rate Swaps allows to manage interest rate risk independently from FX liquidity (which is not the case for FX swaps and Cross Currency swaps)
- Allow for better monitoring of effectiveness of monetary policy



International timeline for benchmark reform

IBORs - universal benchmarks for all transactions

IBOR type indices reflecting unsecured indicative interbank rates including credit and liquidity premium which could be volatile at times of interbank stress and don't always reflect actual market rates (for lack of underlying market)

Dual work streams on IBORs+ and RFRs

Acknowledgement that IBORs may not be best benchmarks for some types of floating rate transactions eg interest rate derivatives that manage pure interest rate risk
=> Parallel work streams on IBOR+ (reforming IBORs) and Risk Free Rates

IBORs to be replaced by RFRs?

- Banks won't be compelled to contribute to Libor from 2021
- Fear of financial penalties
- ISDA working group on Libor fall-backs
- Working Groups on Risk Free Rates and term Risk Free Rates

Timeline of benchmark reform



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Selection and
definition of Risk
Free Reference
Rate (RFR)

- Unsecured RFR e.g. Sonia (GBP), Tona (JPY), Ruonia (RUB), Telbor
- Secured RFR e.g. SOFR (USD), Saron (CHF) etc

Adoption and
use of RFR

- Transition / adoption planning
- Development of OIS

Term fixing
on OIS?

- Term RFR? – Consultation on Term SONIA Reference Rate (TSRR) in the UK
- E.g. ROISfix

Instruments

- Adoption planning
- Development of instruments indexed to the Term RFR

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.

Decisions of the 1st meeting of Armenia Money Market Working Group:

- the CBA acts as a Secretariat for the Working Group
- the Working Group will be chaired on a rotating basis by a member of the Working Group representing a private sector market participant in the Armenian money market.
- before the 2nd meeting the EBRD will draft and circulate draft Terms of References on the purposes, structure and the governance of the Working Group
- EBRD will prepare and propose the agenda for the 2nd meeting of Armenia Money Market Working Group which will be scheduled for early February 2019.

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



Decision / Vote of first chair for Working Group?

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:

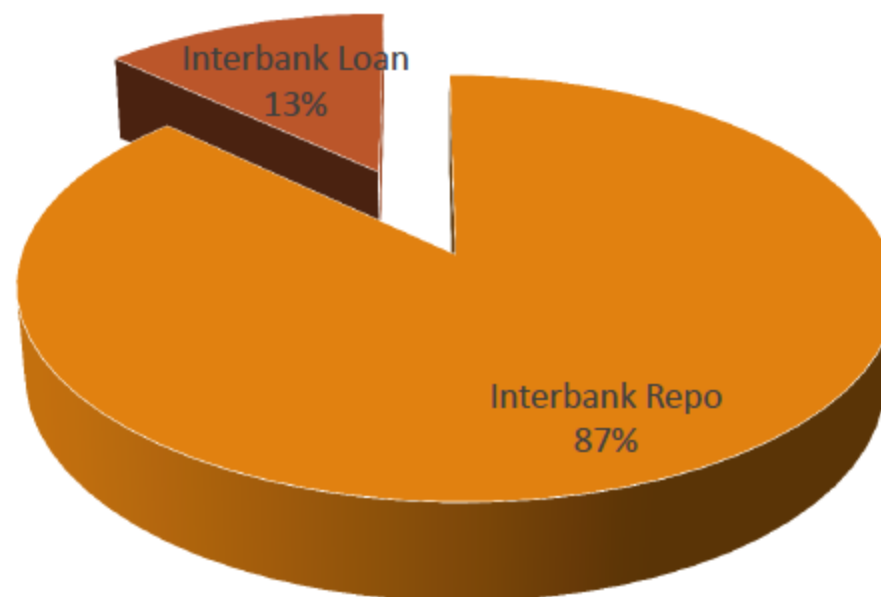
- Identify and review potential data inputs and calculation methodologies for term reference rate
- Agree design criteria for potential administrators and data providers to develop term reference rates, as appropriate.

- Permanent objectives:

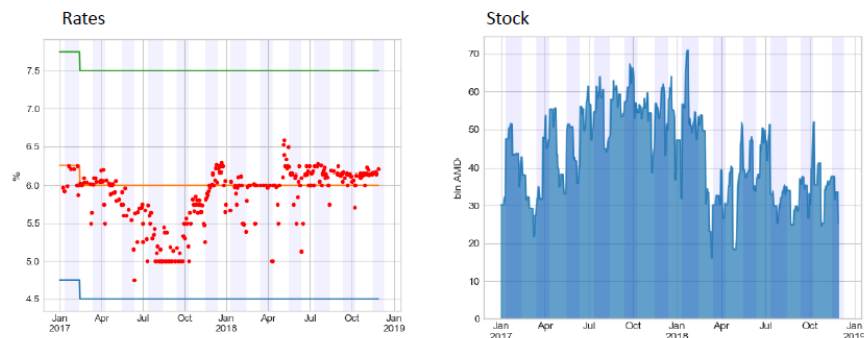
On-going review existing benchmarks on a regular basis to ensure they are still correctly reflecting the underlying interest

Discuss matters related to money market indices

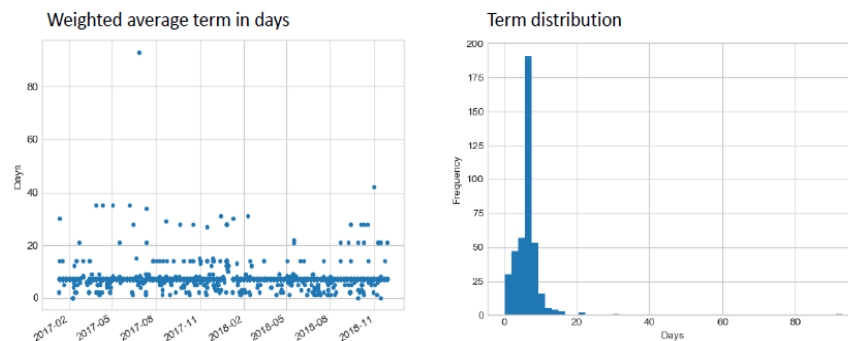
Interbank repo and loan market structure



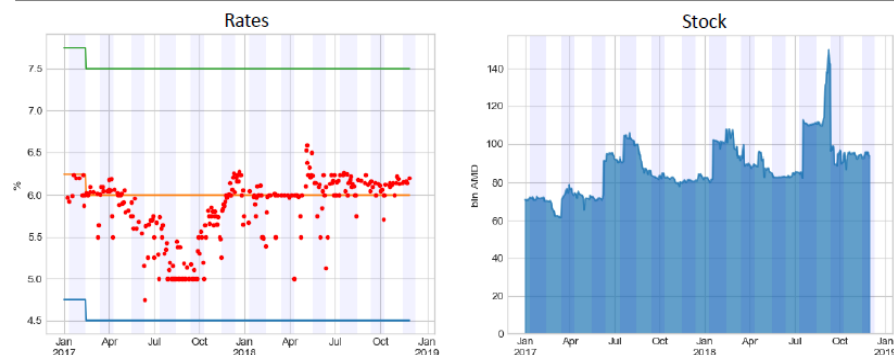
Interbank repo market



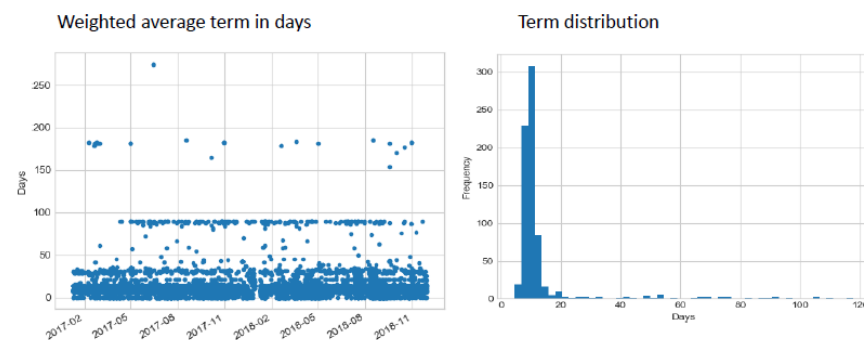
Interbank repo market (2)



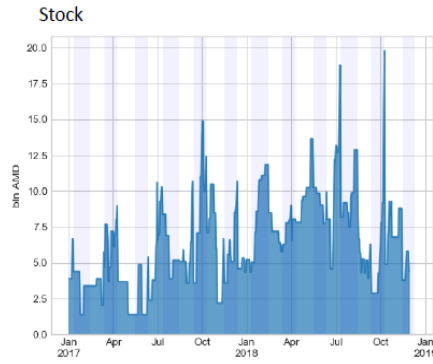
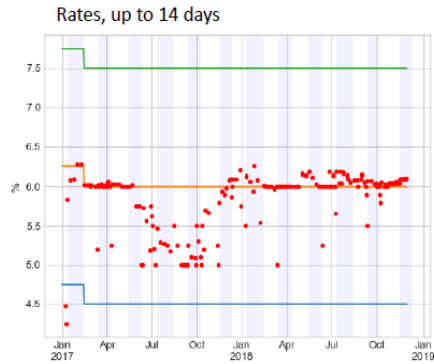
Intrabank repo market



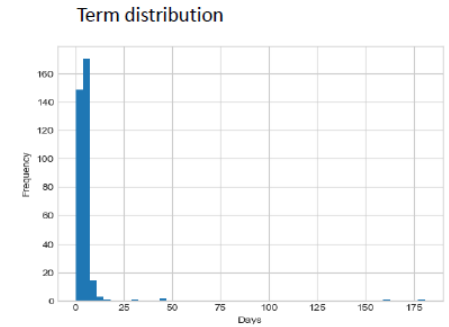
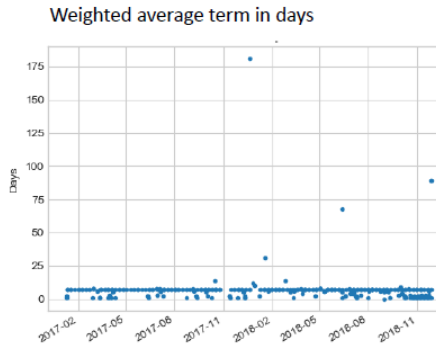
Intrabank repo market (2)



Interbank loan market

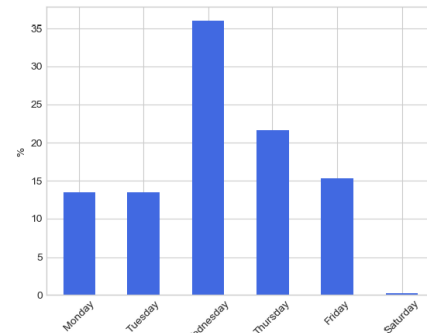


Interbank loan market (2)

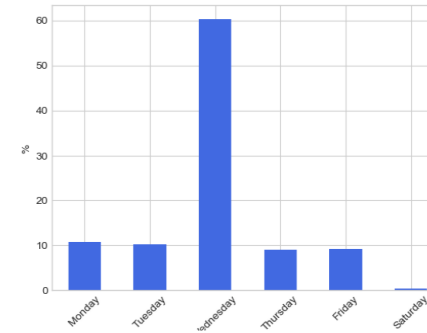


Transaction structure by weekdays

INTERBANK REPO

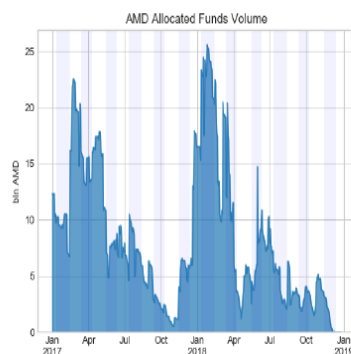


INTERBANK LOAN

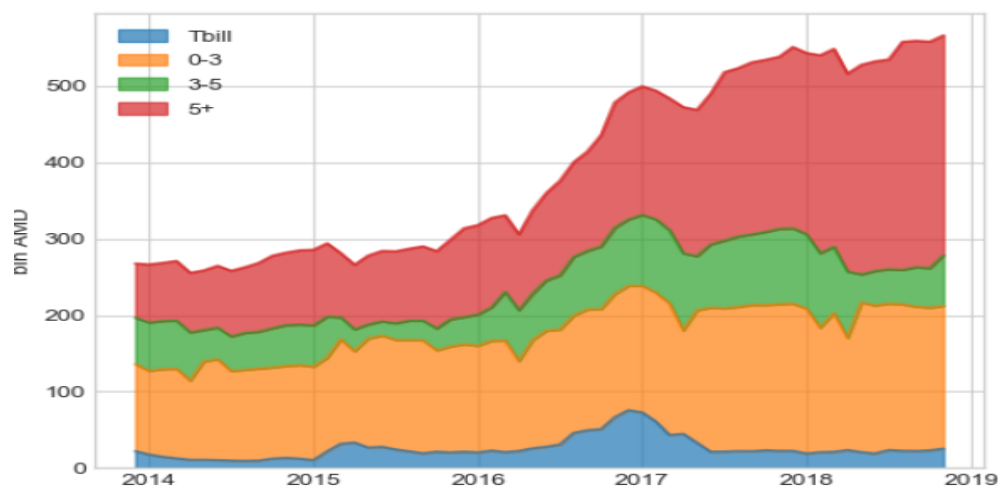
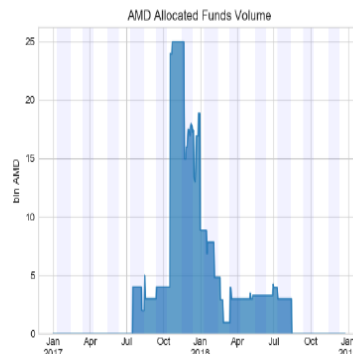


Swap markets

CURRENCY SWAP



EXCHANGE RATE SWAP



Guiding principles for a reliable Money Market benchmark rate



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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

Potential candidates for AMD RFR?

Rate	Known Advantage	Known Disadvantage	RFR Candidate ?
Repo Traded rate	- Based on market transactions - Largest traded interbank segment - Reflective of monetary policy target rate - No counterparty risk	- Most liquidity in 1w transactions - what tenor should be used? - Concentration of traded volumes mainly on Wednesdays - Need for collateral - Can be affected by many technical effects (Period-end, Availability of collateral...)	
Unsecured Traded rate	- Based on market transactions - No need for collateral - Reflective of monetary policy target rate - Easy to replicate and hedge	- Low underlying market volume – any risk of absence of transactions on certain dates? - Existing but negligible counterparty risk - Concentration of traded volumes mainly on Wednesdays	

Potential candidates for AMD RFR?

Rate	Known Advantage	Known Disadvantage	RFR Candidate ?
Swaps implied rate		- Low and irregular underlying market volume - Price impacted by rate on hard currency leg and therefore not reflective of monetary policy target rate	
T-Bills	- Based on market transactions	- Cannot be candidate for overnight risk free rate - Price impacted by offer and demand -	
Central Bank Rate	- Fixed by the Central Bank - Transparent and Robust against manipulation	- Doesn't represent the real market - Cannot be hedged or replicated - Strong dependence on the monetary policy (The CB can change the banks' financing rate at any moment)	

Assessment of RFR candidates



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Assessment of the candidate Risk Free Rates		
	Unsecured O/N rate	Secured O/N rate
1 - Quality of the benchmark and methodology:		
Existence of sufficient and reliable market data to produce a robust and reliable index (quantity, quality, availability of data for the administrator)		
Quality of the calculation methodology (does it allow for a fair reflection of the underlying interest, can the calculation be improved?)		
Robustness to changes in market structure over time		
Minimal opportunities for market manipulation		
Published and governed by an appropriate administrator		
Commercial sustainability for administrator and data contributors		
Appropriate controls and governance for administrator and data contributors		
2 - Transparency and sustainability		
Clarity of definition		
Clarity of calculation/setting		
Acceptable/stable fallback mechanisms		
Clarity on procedures for evolution in case change of benchmark methodology changes warranted by evolution in market structure.		

Assessment of RFR candidates



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Assessment of the candidate Risk Free Rates		
	Unsecured O/N rate	Secured O/N rate
3 - Sensitivities		
Credit premia		
Liquidity premia		
Can be easily replicated by market participants		
Technical effects (Period-end, Availability of collateral,...)		
Proximity to policy rate (Monetary policy target)		
Regulatory change		
Changes in the monetary policy framework		
4 - Other considerations for adoption/transition		
Ease /low cost of implementation		
Already used by the market as a benchmark		
Reflect market funding rate during normal and market stress situations		
Same day availability (e.g. at close of business)		
Ease of building a term curve extension		
Consistent with RFRs chosen for other currencies		
Accepted internationally		



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AOB on AMD Money Markets and Q&A



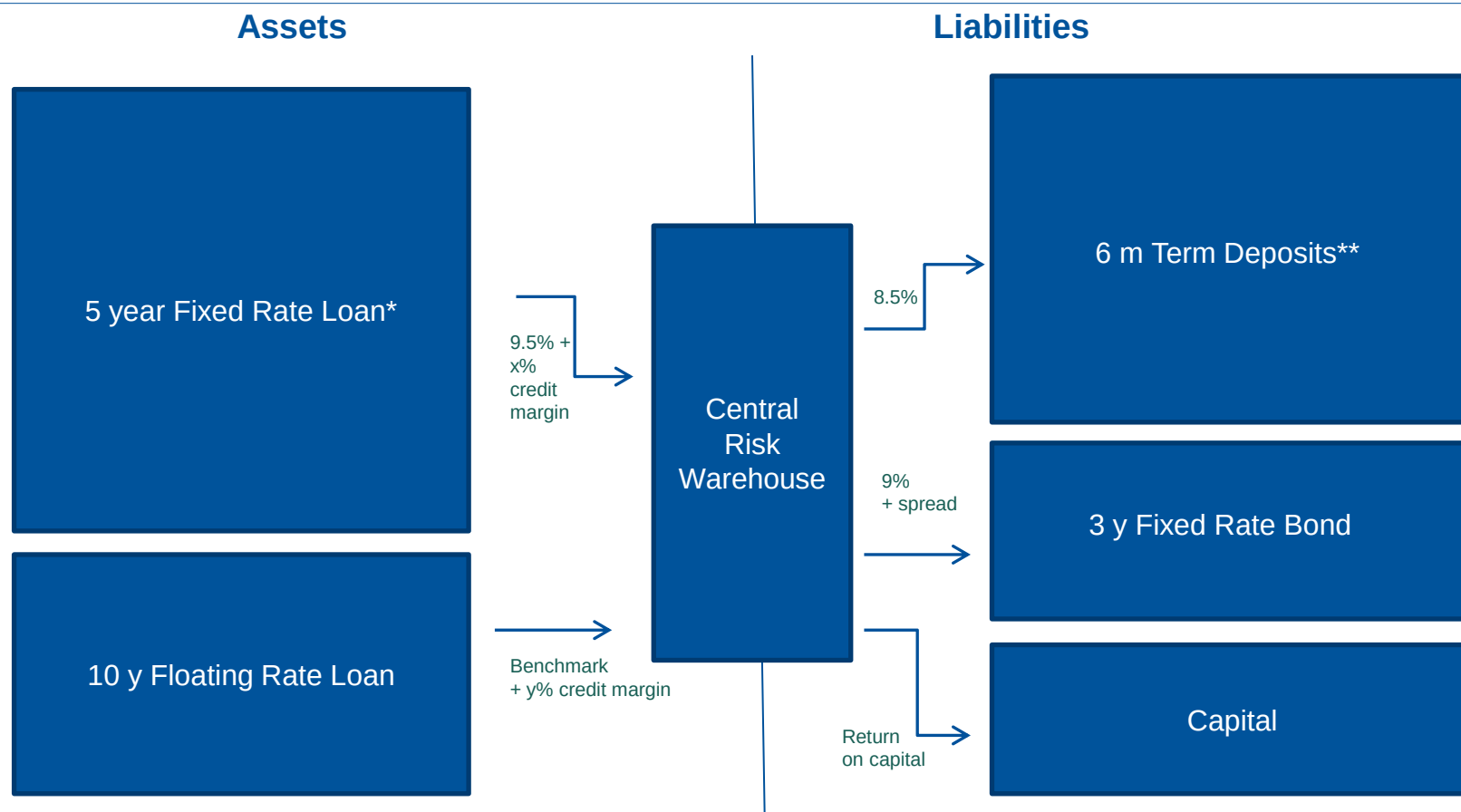
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ANNEXES

Best practices - How do benchmarks support better risk management? At the Balance Sheet level



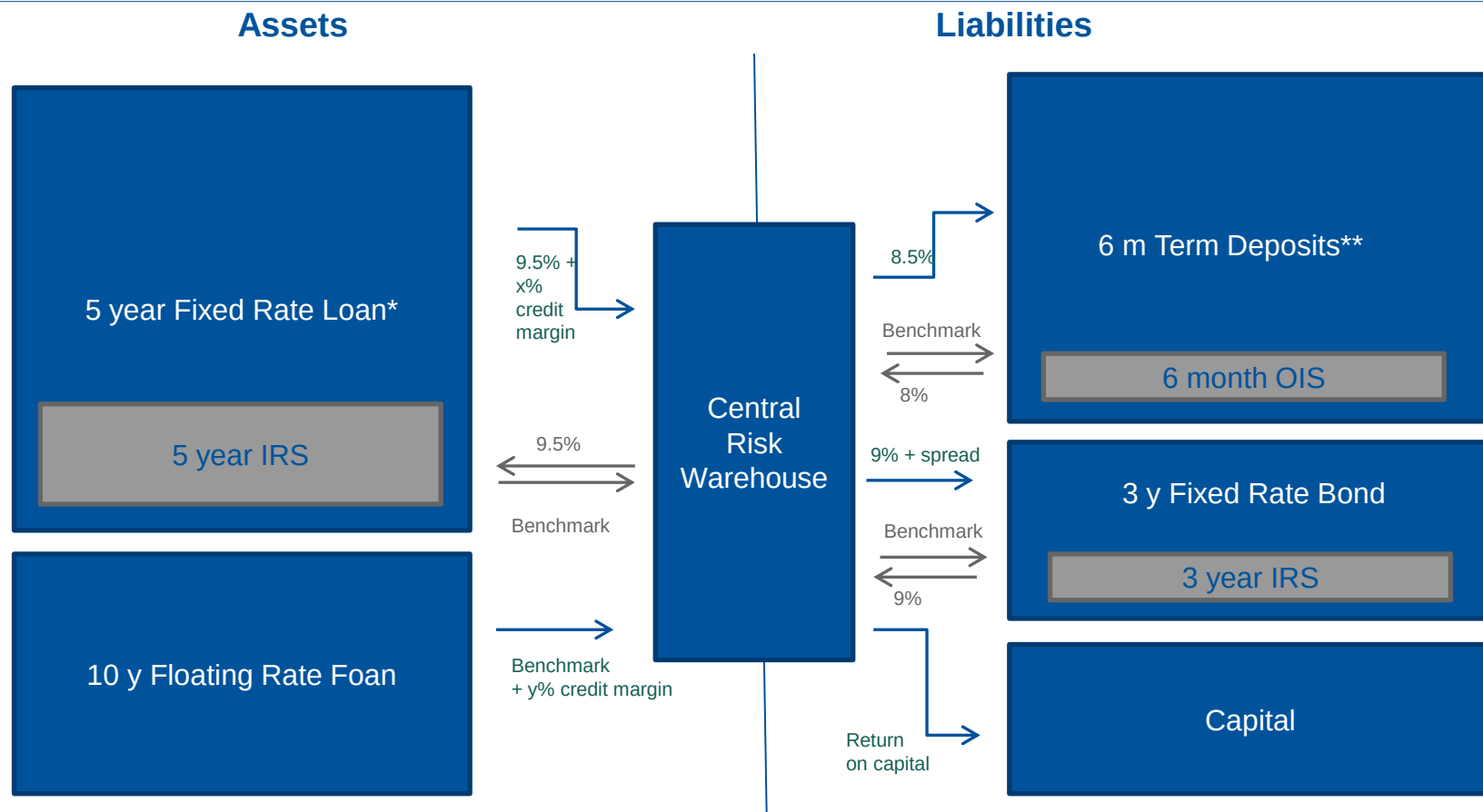
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* Real fixed rate!

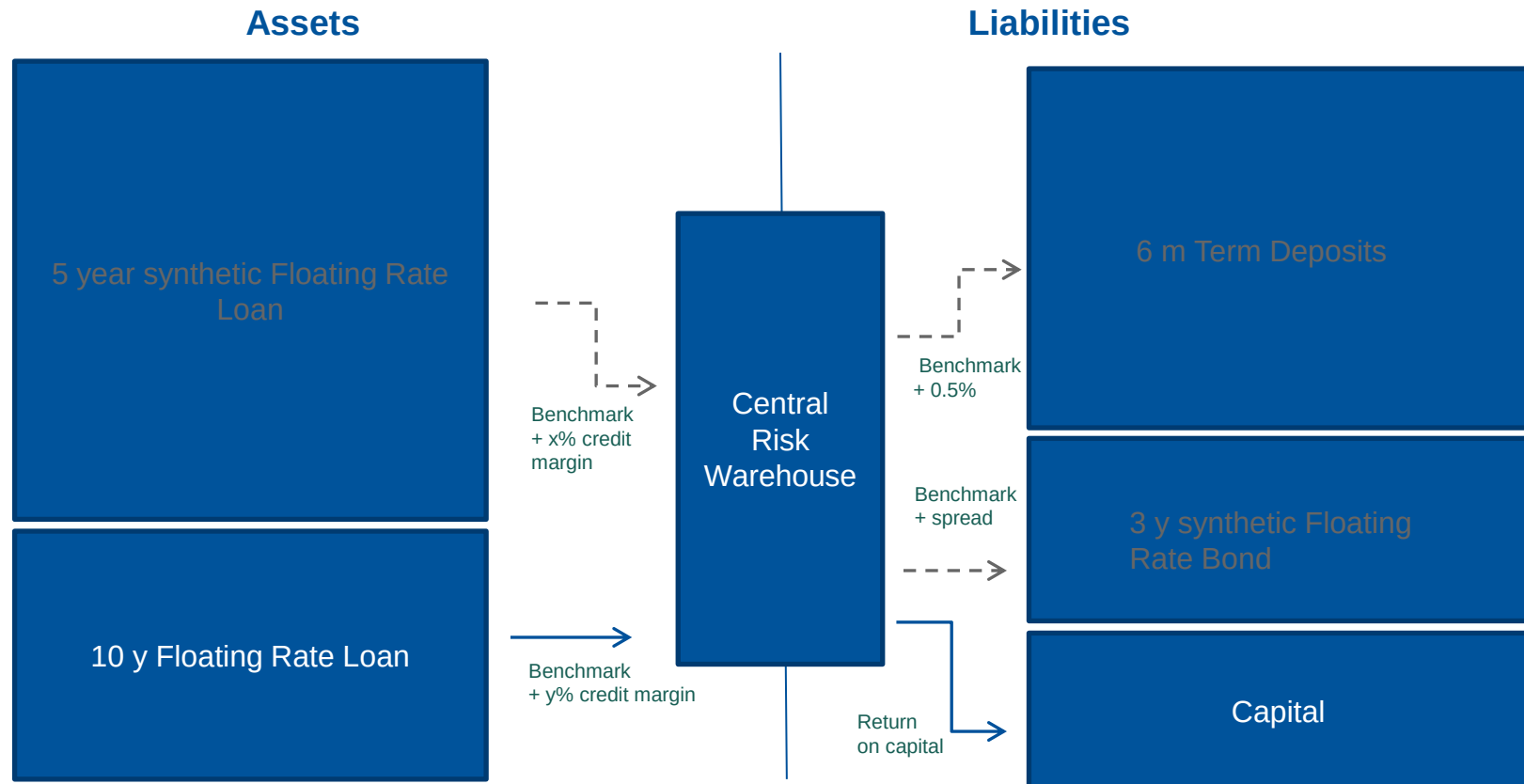
** Term deposit that cannot be broken without a penalty

Best practices - How do benchmarks support better risk management? At the Balance Sheet level



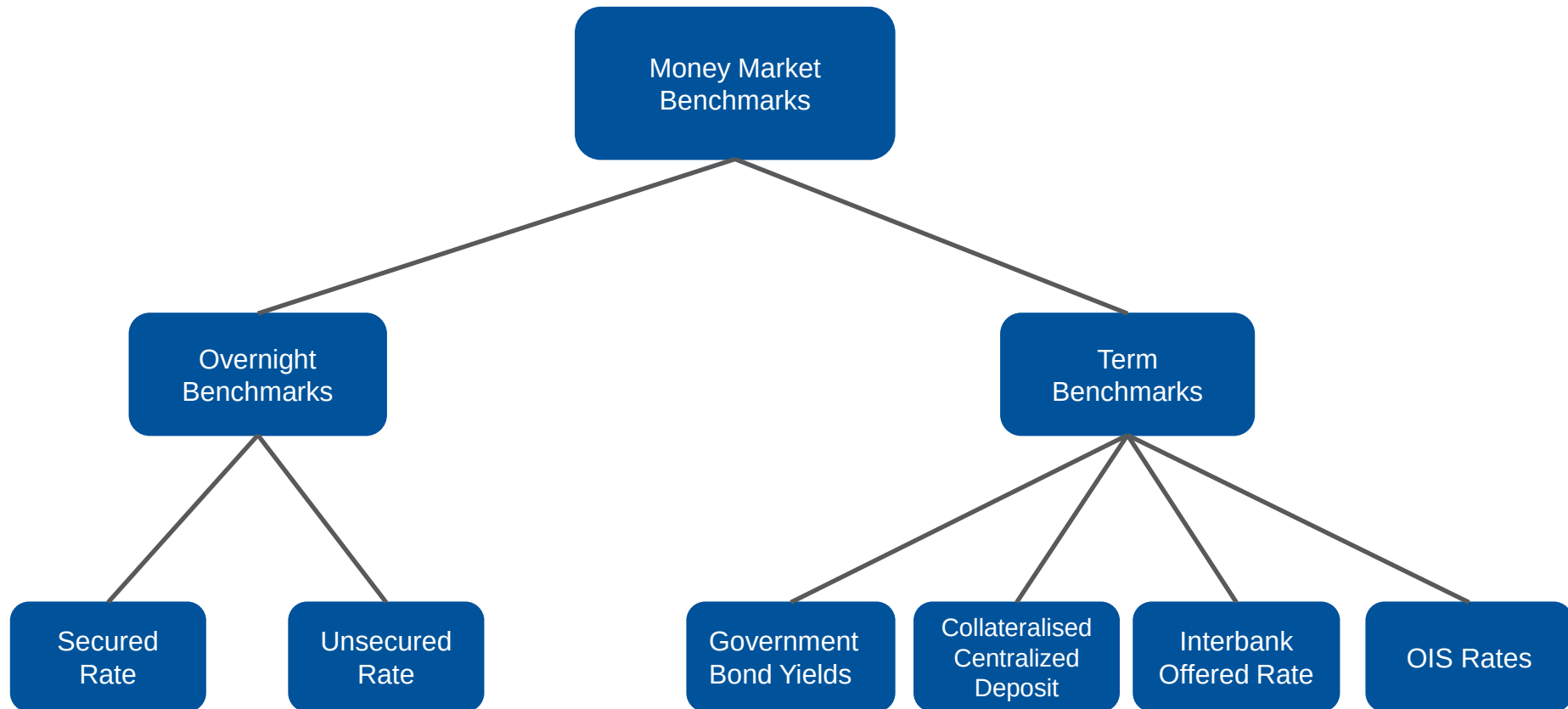
* Real fixed rate!

** Term deposit that cannot be broken without a penalty



- Synthetic floating rate balance sheet – only residual short term interest rate mismatches
- Allows to lock-in funding at best point in time, swap fixed rate liabilities to floating rate to warehouse excess liquidity until loan disbursement without running interest rate risk
- Allows for longer term assets than liabilities - Refinancing risk addressed by prudent liquidity management (liquidity buffers) and Central Bank Inflation Targeting framework

Proxies for MM benchmark rates



Annex 1 - EBRD's Experience with interbank indices

Annex 2 - Criteria for potential alternative RFRs

Annex 3 - Reformed SONIA key features

G7 RFR Working Groups - update

Jurisdiction	Working Group	Alternative RFR	Regulator	Publication Date	Description of RFR
	Alternative Reference Rate Committee	Secured Overnight Financing Rate (SOFR)	Federal Reserve Bank of New York	April 3, 2018	SOFR is secured , overnight, and transaction-based. SOFR encompasses multiple repo market segments.
	Working Group on Sterling Risk-free Reference Rate	Reformed Sterling Overnight Index Average (SONIA)	Bank of England	April 23, 2018	Reformed SONIA is unsecured , overnight, and transactions-based.
	Working Group on Euro Risk-free Rates	ESTER	European Central Bank (ECB)	By October 2019	ESTER will reflect the wholesale euro unsecured overnight borrowing costs of euro area banks.
	The National Working Group on CHF Reference Rates	Swiss Average Rate Overnight (SARON)	Swiss National Bank	Currently being published	SARON is a secured overnight rate that reflects interest paid on interbank overnight repo transactions. The entire CHF Tomorrow Overnight Indexed Swap (TOIS) market was transitioned to SARON on December 29, 2017 upon the TOIS rate's discontinuation.
	Study Group on Risk-free Reference Rates	Tokyo Overnight Average Rate (TONA)	Bank of Japan	Currently being published	TONA is unsecured , overnight and transaction-based. It reflects the uncollateralized overnight call rate market
	Canadian Alternative Reference Rate Working Group	Expected to be an enhanced Canadian Overnight Repo Rate Average (CORRA)	Bank of Canada	TBD	CORRA is secured , overnight and transaction based. It is a measure of the average cost of overnight collateralized funding and covers the overnight repo market.

Annex 1 - EBRD's Experience with interbank indices

- EBRD has worked (and is still working) with local banks and authorities in many of its Countries of Operation to help improve the transparency and credibility of local interbank indices
- For example, in Russia, EBRD actively promoted the development of MOSPRIME (launched in 2005), RUONIA (2010) and ROISFIX (2011) and subsequently indexed (loans, bonds and swaps) transactions to these benchmarks.
- The development of a credible interbank index in these markets has allowed:
 - deeper liquidity especially for longer maturities with the extension of credit lines between participating banks;
 - the development of hedging instruments (i.e. futures on MICEX and interest rate swaps and Russia);
 - floating rate loans including for mortgages, as well as deposits;
 - greater transparency for credit and internal transfer pricing.



£ criterion for selecting RFR

- Sufficient and reliable market data
- Robustness to changes in market structure
- Appropriate governance and commercial sustainability
- Ease of understanding
- Ease of OIS transition
- Same day availability of the RFR
- Ability to build a term extension
- Consistency with RFRs chosen for use in other currencies

Box 4: ARRC Criteria for Potential Alternative Reference Rates

- **Benchmark Quality**
The degree to which the benchmark design ensured the integrity and continuity of the rate. The underlying market was evaluated according to its:
 - Liquidity
 - Transaction volume
 - Resilience through periods of illiquidity
 - Resilience to changes in regulatory approach
 - Potential that the benchmark may constrain or be adversely affected by changes in the monetary policy framework
- **Methodological Quality**
The degree to which the benchmark construction could satisfy the IOSCO Principles for soundness and robustness. Rates were also evaluated according to:
 - Standardized terms for data inclusion
 - Transparency of data
 - Availability of historical data
- **Accountability**
Evidence of a process that ensures compliance with the IOSCO Principles
- **Governance**
Evidence of governance structures that promote the integrity of the benchmark
- **Ease of Implementation**
Assessed ease of transitioning to the rate, including:
 - Anticipated demand for and relevance to hedging/trading
 - Existence of or potential for a term market in the underlying rate

Annex 3 - Reformed SONIA key features

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.

<http://www.bankofengland.co.uk/markets/Documents/soniafeaturespolicies.pdf>

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