

INTEREST RATE BENCHMARK REFORM

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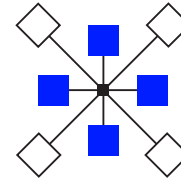
Bank of Thailand, Bangkok
15 October 2019

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Director of Benchmarks

REFINITIVTM
DATA IS JUST
THE BEGINNING



The basics: What is Happening to LIBOR?



Scandals, Fines and Regulation

- Flaws of submission based LIBOR exposed. **\$9Bn** of fines given by regulators for exploiting flaws
- Introduction of the IOSCO Principles for Financial Benchmarks to improve their appropriateness, governance and transparency
- UK Regulator (FCA) regulates LIBOR, along with other critical UK benchmarks
- EU Launches Benchmark Regulation (EU BMR) in 2018

Concerns of Underlying Market IBORs are Supposed to Benchmark

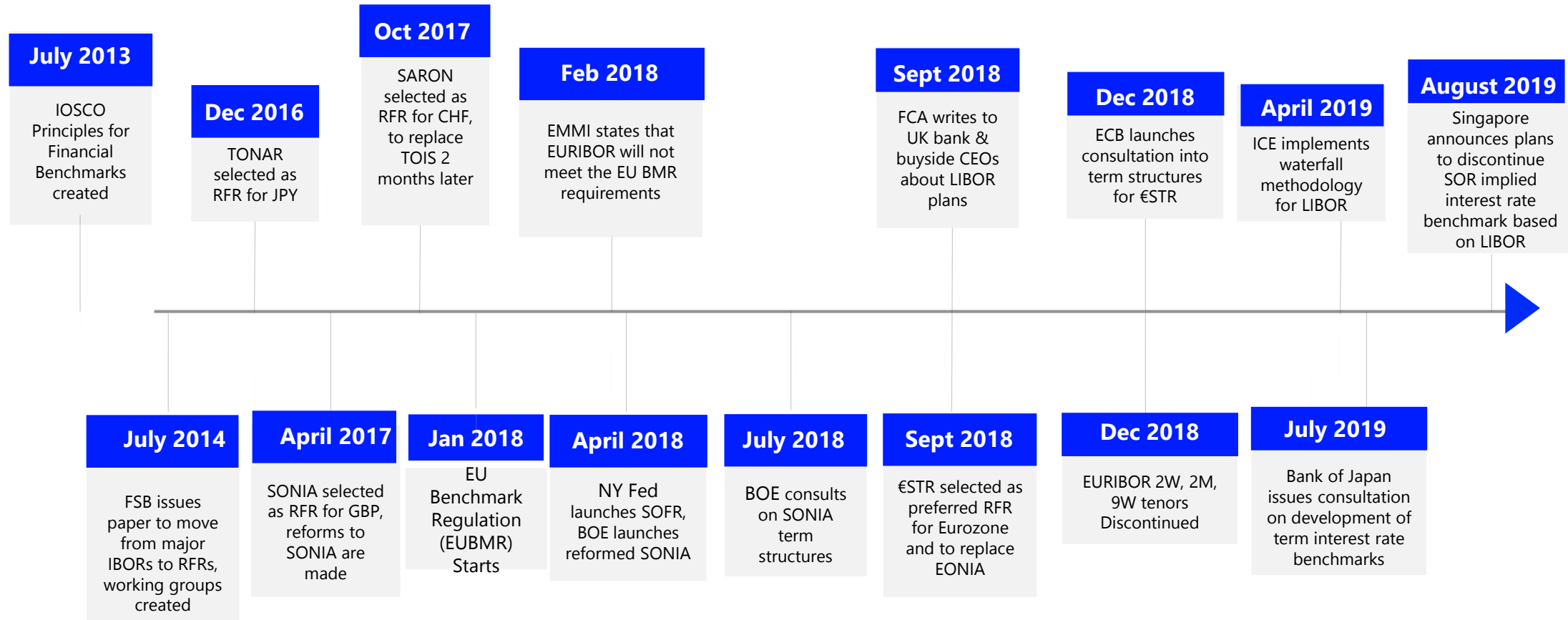
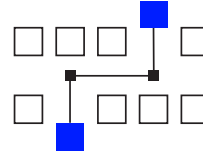
- Much less interbank lending
- Many IBORs are not based on any actual market making them very easy to manipulate
- E.g. \$200 Bn linked to 3M USD LIBOR but the Fed noted generally less than \$0.5Bn of 3M wholesale funding actually exists

LIBOR's end and long term replacements

- 2017: FCA announced banks will not be compelled to contribute to LIBOR post 2021
- Working groups set up in major markets to select alternative Risk Free Rates (RFRs) to be used should IBORs cease to exist.
- Continued reminders by regulators and associations to users to plan for LIBOR's replacement with RFRs e.g. "Dear CEO" letter from Bank of England

Timeline of LIBOR related events

2013 to Present



The basics: Who does this impact



USERS

- Banks and Buyside, Corporates
- \$350 Tn of LIBOR exposure
- Risks of Contracts referencing potentially discontinued benchmarks in the future (e.g. IRS referencing LIBOR post 2021)



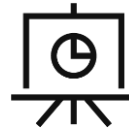
BENCHMARK ADMINISTRATORS

- Central Banks, Associations, Service Providers, Regulators
- Other country IBORs and similar submission based benchmarks
- Benchmarks directly using LIBOR as an input> THBFIX, ABS SOR, TRYFIX



Paths to Interest Rate Reform

Issues central banks and administrators
need to consider



Principal Differences between IBORs and RFRs

- RFR has no term structure
- RFR has no credit risk
- RFR is not forward looking



Question for Most Administrators:

- How to **create a robust term interest rate benchmark** based on actual transactions?



Paths to Interest Rate Reform

Issues central banks and administrators
need to consider



Issues to consider

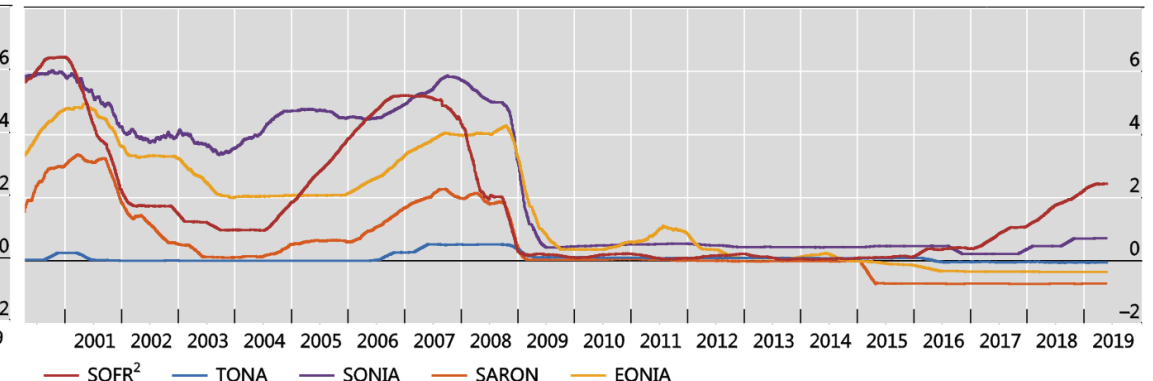
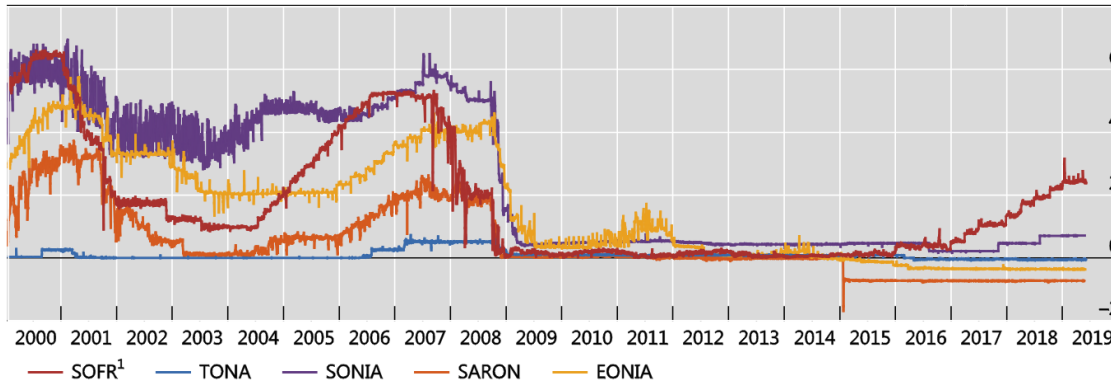
- Are there sufficient interbank transactions?
- Do we look at secured or unsecured transactions?
- Should we look at other participants e.g. corporates and buy-side?
- Can we deal with substantially different benchmark rates and volatility levels than an IBOR?
- Is there any market data that can be used to create a term structure (OIS, Futures)?

Switch to Risk Free Rates in Major Developed Markets

Developments in Interest Rate Benchmarks

SOFR and other overnight RFRs are typically volatile (FSB):

Averaging (simple or compounded) smooths the references for use in products (3 month averages):



Jan to May
2019



GBP 19 Billion of FRNs
Referencing Compound
SONIA
> 21 Banks



USD 100 Billion of FRNs
referencing Compound SOFR
> 99 Banks

Options Chosen for Interest Rate Benchmark Reform

Risk Free Rate + Term Structure

- Using OIS data (quotes as well and transactions) from a venue and brokers or use futures
- Applied to existing RFRs (usually central bank administered & calculated)
- OIS based options preferred by major developed markets

Evolved IBOR

- Waterfall methodology used for submitters
- Start with actual interbank transactions, then look at similar transactions (e.g. from corporates and buy-side), then expert judgement
- Similar to ICE LIBOR methodology

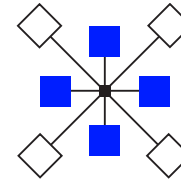
Approaches to **Benchmark** Reform

Developments in Interest Rate Benchmarks

- **Risk-free** reference rates (RFRs) and approaches now well established in a number of countries:

Jurisdiction	Existing IBOR	RFR	RFR Announced	RFR Administrator	Description	Official Sector Approach
USA	USD LIBOR	SOFR	April 2018	Federal Reserve Bank of New York	Overnight US Treasury repo (new)	Full migration to RFR
UK	GBP LIBOR	SONIA	April 2018	Bank of England	Overnight unsecured deposit (enhanced)	Full migration to RFR
Eurozone	EURIBOR	€STR	October 2019	ECB	Overnight unsecured deposit (new)	Dual curve approach
Switzerland	CHF LIBOR	SARON	October 2017	SIX Swiss Exchange	Overnight repo transactions (existing)	Full migration to RFR
Japan	TIBOR	TONA	December 2016	Bank of Japan	Overnight unsecured call rate (existing)	Dual curve approach
Australia	BBSW	Cash Rate (AONIA)	2017	Reserve Bank of Australia	Overnight unsecured fund (existing)	Dual curve approach
Canada	CDOR	Enhanced CORRA	November 2018	Bank of Canada	Overnight repo transactions (enhanced)	Dual curve approach
Singapore	SIBOR	SORA (tbc)	August 2019	Monetary Authority of Singapore	Overnight unsecured transactions	Dual curve approach
Hong Kong	HIBOR	HONIA	April 2019	Treasury Markets Association	Overnight unsecured transactions	Dual curve approach

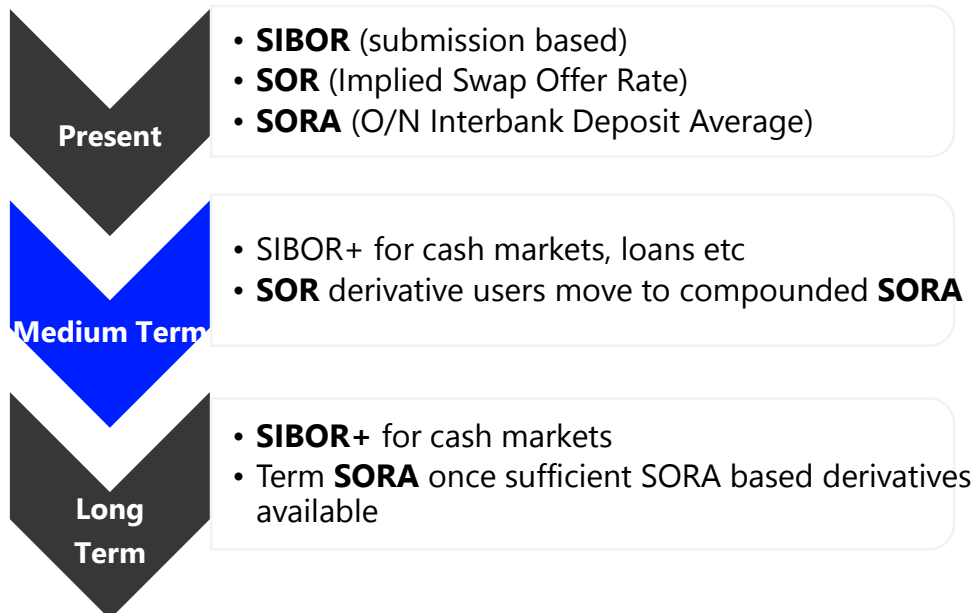
Example of Developments in Asia



Different Strategies for Countries with No OIS Market: Dual Curve Approach Fits

Singapore

- Testing and looking to implement Enhanced SIBOR (SIBOR+) in 2020
- Similar waterfall methodology for submitters as ICE LIBOR
- In addition to existing interbank transactions, submitters consider corporate and buyside deposits before resorting to expert judgement



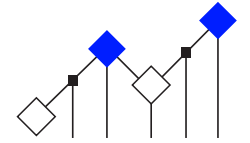
Hong Kong

- Minor enhancements to HIBOR and retain
- More robust HONIA, plans to calculate directly from transactions
- Use both for cash + derivative markets

Indonesia

- Bank Indonesia Launched INDONIA in August 2018 to replace O/N JIBOR tenor and potentially replace it in the long term

Refinitiv Interest Rate Benchmarks



Refinitiv is the Largest Provider of Interest Rate Benchmarks globally

- Administrator of CDOR and CORRA (Canada), SAIBOR (Saudi Arabia), TRYFIX (Turkey) and VNIBOR (Vietnam)
- Calculating agent for over 30 major interest rate benchmarks including THBFIX, SIBOR (Singapore), SOR (Singapore), CNH HIBOR (Hong Kong), HONIA (Hong Kong), MOSPRIME (Russia), KLIBOR (Malaysia), TAIBOR (Taiwan), EIBOR (UAE)

Term Structure Initiatives

- Plan to launch term structures to be added to central bank RFRs
- Based on Tradeweb and broker OIS data
- Focus on GBP, USD, JPY, CAD.
- Can be used to replace USD/GBP/JPY LIBOR; TIBOR and CDOR term exposures
- Can also be used to replace USD LIBOR in other implied interest rate benchmarks which use forward looking cash flows

Risk Free Rate Initiatives

- Creation of new RFRs primarily in developing countries
- Operational enhancements to existing RFRs
- Use deposit transaction data from Refinitiv FXT or from post trade services for voice brokered trades



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Thank you.

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