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Discontinuation of LIBOR and What This Means for Insurers

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Contents

LIBOR – A Short Background

LIBOR – A High Level Overview

1986

year **LIBOR was introduced**

2021

year after which the **FCA will no longer compel panel banks** to submit to LIBOR

$370T

total outstanding notional of **IBOR** exposures across markets and currencies

$300T

total outstanding notional of **USD LIBOR and EURIBOR** exposures ($150T for each rate) globally

$150T

Notional **Interest Rate Derivatives** trading volume linked to LIBOR in 2018

11:55am

Time (GMT) at which LIBOR is normally published for each currency and tenor combination on every business day

97%

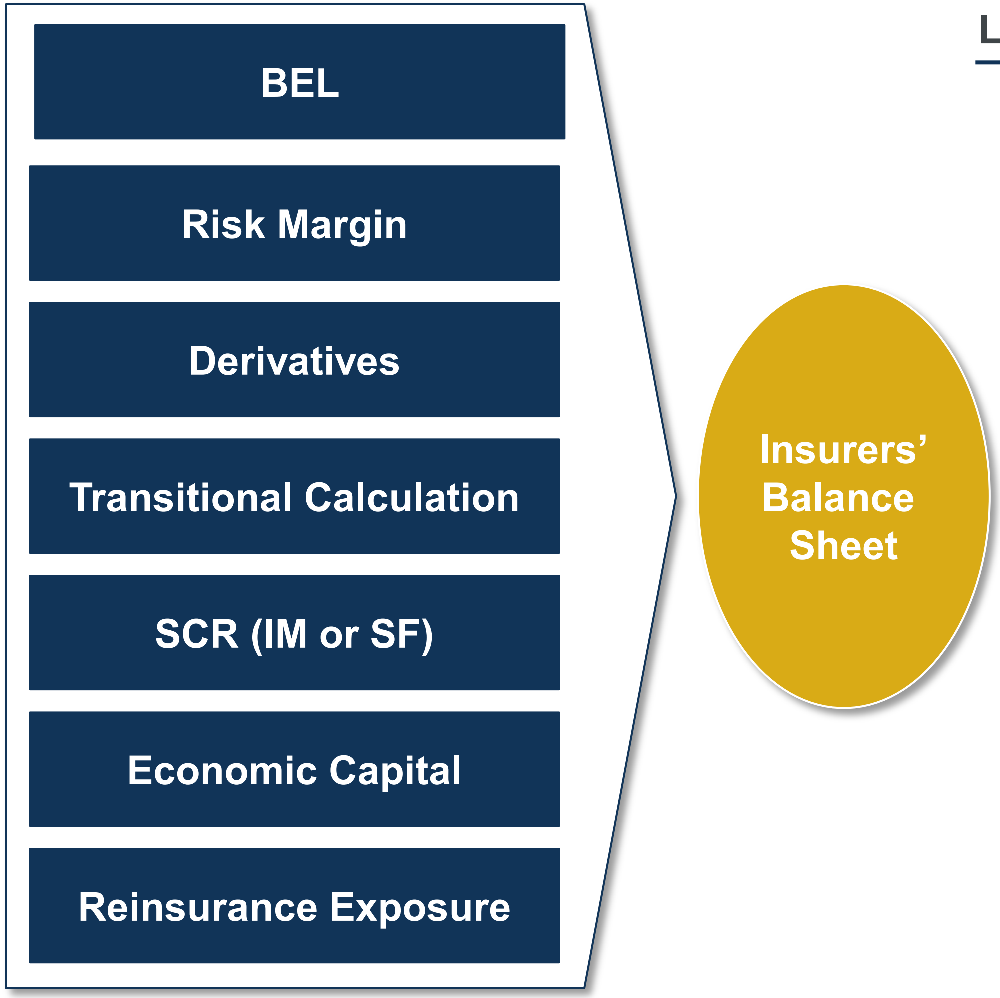
portion of **syndicated loans in the US market** (~$3.4T in outstanding volumes) that reference USD LIBOR

3m

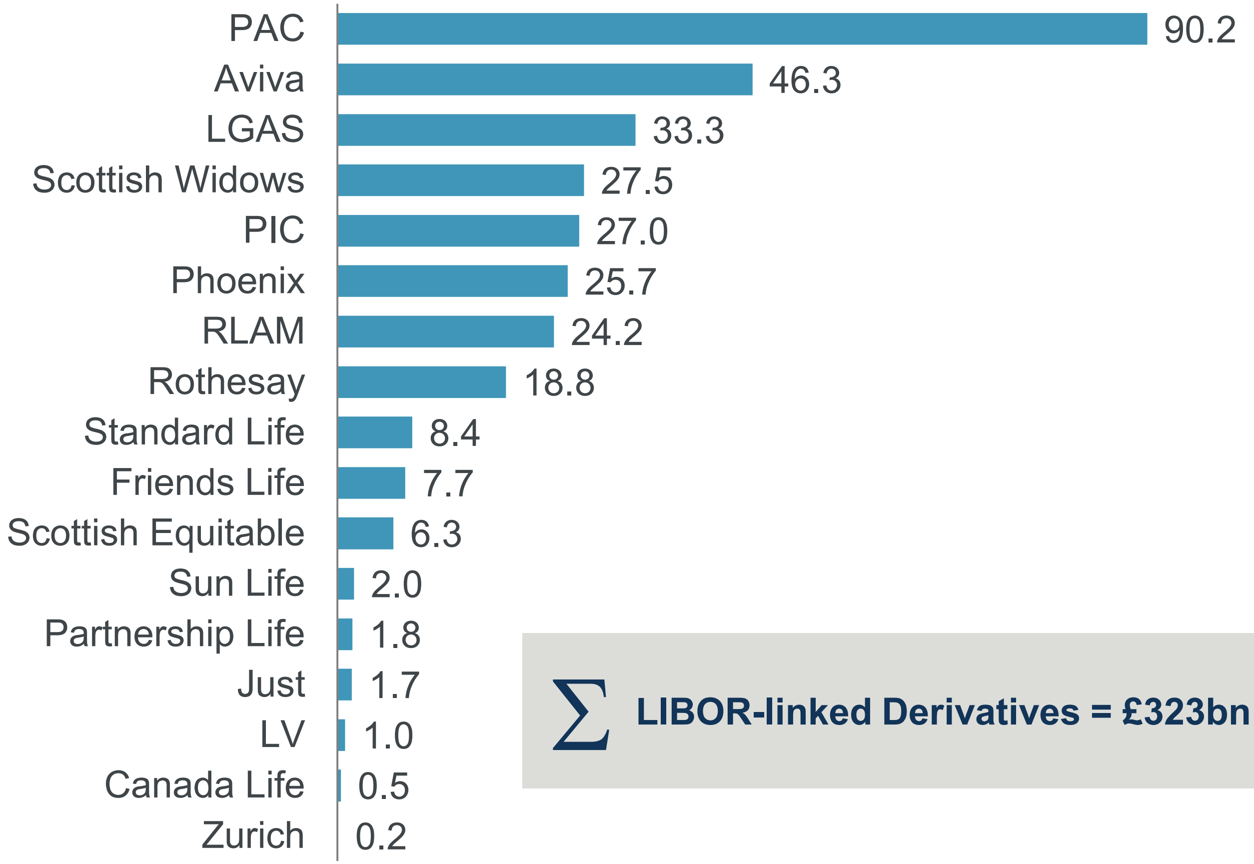
benchmark tenor most widely referenced, by volume

Source: ISDA, "IBOR Global Benchmark Survey 2018 Transition Roadmap" (data as of 2014)

LIBOR – How Big Is the Problem for UK Insurers?



LIBOR-Linked Derivatives Notional Summary – 2015 PRA Returns (£bn)



$\sum$ **LIBOR-linked Derivatives = £323bn**

Source: PRA Returns 2015.

LIBOR Phase Out – How Did it Happen?

Current Position

Relevance

Limitations in the relevance of LIBOR as a benchmark rate

Sustainability & Stability

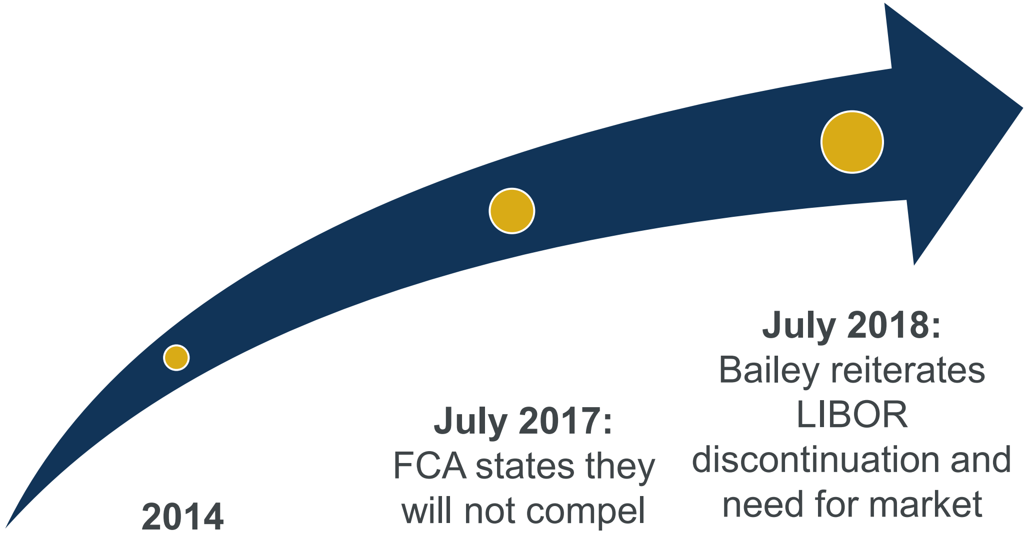
Questions around the sustainability and stability of LIBOR in stressed market conditions, given the lack of an active and highly liquid underlying market

LIBOR Manipulation

Instances of LIBOR manipulation in the 2008 financial crisis and the 2012 LIBOR scandal

IMPACT

Events



2014
FSB recommend review of IBOR Rates

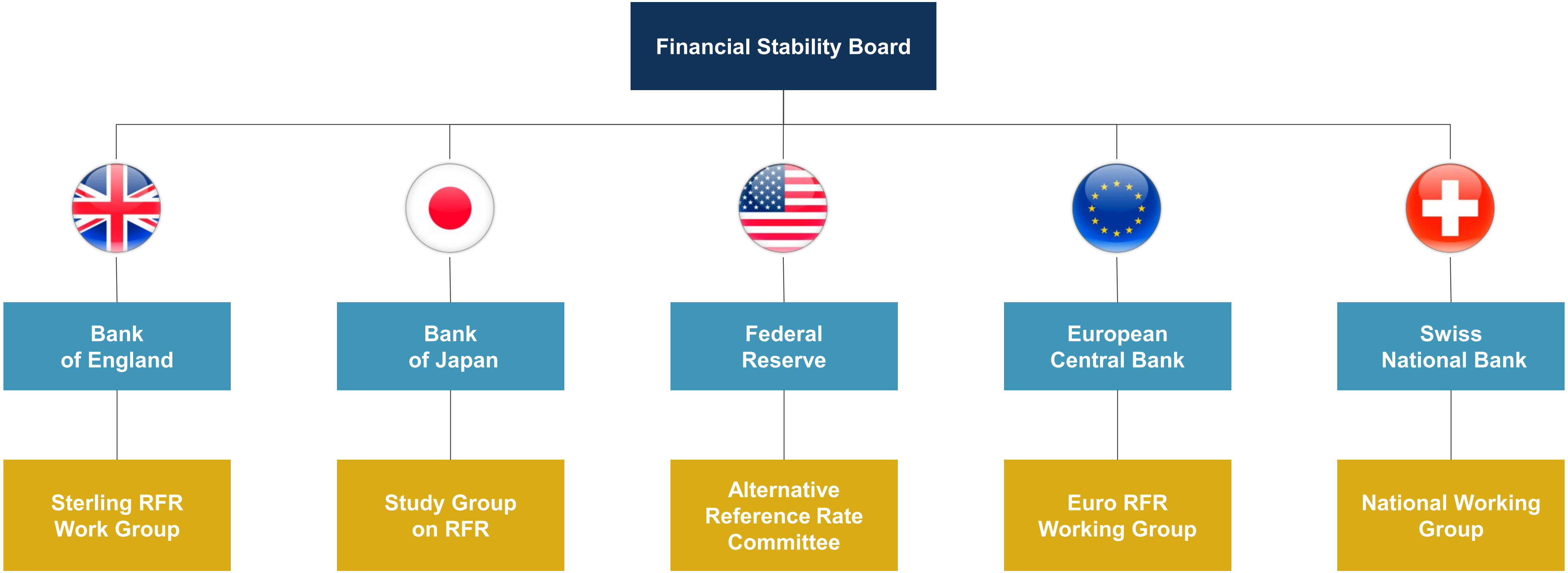
July 2017:
FCA states they will not compel LIBOR submission after 2021

July 2018:
Bailey reiterates LIBOR discontinuation and need for market preparedness

Source: GS Securities as of April 2019.

SONIA – New Benchmark Risk-Free Compliant Rate?

Global Interest Rate Benchmarks



Source: Interbank Offered Rate (IBOR) Fallbacks for 2006 ISDA Definitions Consultation on Certain Aspects of Fallbacks for Derivatives Referencing GBP LIBOR,1 CHF LIBOR, JPY LIBOR, TIBOR, Euroyen TIBOR and BBSW. Published July 2018 http://assets.isda.org/media/f253b540-193/42c13663-pdf/ and GS Securities Division. Indicative and for discussion purposes only

Risk Free Rates (RFR) Working Groups

Jurisdiction	Working Group	Alternative RFR	Rate Administration	Secured vs. Unsecured	First Publication
US	Alternative Reference Rates Committee	Secured Overnight Financing Rate (SOFR)	Federal Reserve Bank of New York	Secured	3 April 2018
UK	Working Group on Sterling Risk-Free Reference Rates	Reformed Sterling Overnight Index Average (SONIA)	Bank of England	Unsecured	23 April 2018
Europe	Working Group on Risk-Free Reference Rates for the Euro Area	Euro Short-Term Rate (€STR)	European Central Bank	Unsecured	Anticipated October 2019
Switzerland	The National Working Group on CHF Reference Rates	Swiss Average Rate Overnight (SARON)	SIX Swiss Exchange	Secured	Already published prior to 2018
Japan	Study Group on Risk-Free Reference Rates	Tokyo Overnight Average Rate (TONAR)	Bank of Japan	Unsecured	Already published prior to 2018

Source: ISDA, "IBOR Global Transition Roadmap," 1 February 2018 (https://www.isda.org/a/g2hEE/IBOR-Global-Transition-Roadmap-2018.pdf)

Timeline: Future Events in the LIBOR Transition

Q2-Q4 2019
Agreed upon derivatives fallback language to be included in updated 2006 ISDA Definitions

1 October 2019
€STR publication begins

Q4 2019
ISDA is expected **to release protocol** and **update 2006 definitions**
ISDA consultation is expected for EURIBOR and EUR LIBOR

1 January 2020
Original deadline for compliance with the **EU Benchmarks Regulation (BMR)**

31 December 2021
Potential extended deadline for BMR compliance (proposed by EU MEPs) for **critical benchmarks**

April 2019
ISDA consultation to be launched for USD, HKD, and CAD

Q2-Q3 2019
ISDA to ask for feedback regarding the methodology for the spread adjustment calculation

Q3-Q4 2019
Expected creation of term SONIA reference rate
GBP fallback language agreed upon and implemented

Q1 2020
CCPs to begin allowing a choice between clearing new or modified swap contracts

Q2-Q4 2021
expected. creation of term SOFR reference rate

1 January 2022
Banks no longer compelled by the FCA to make LIBOR submissions

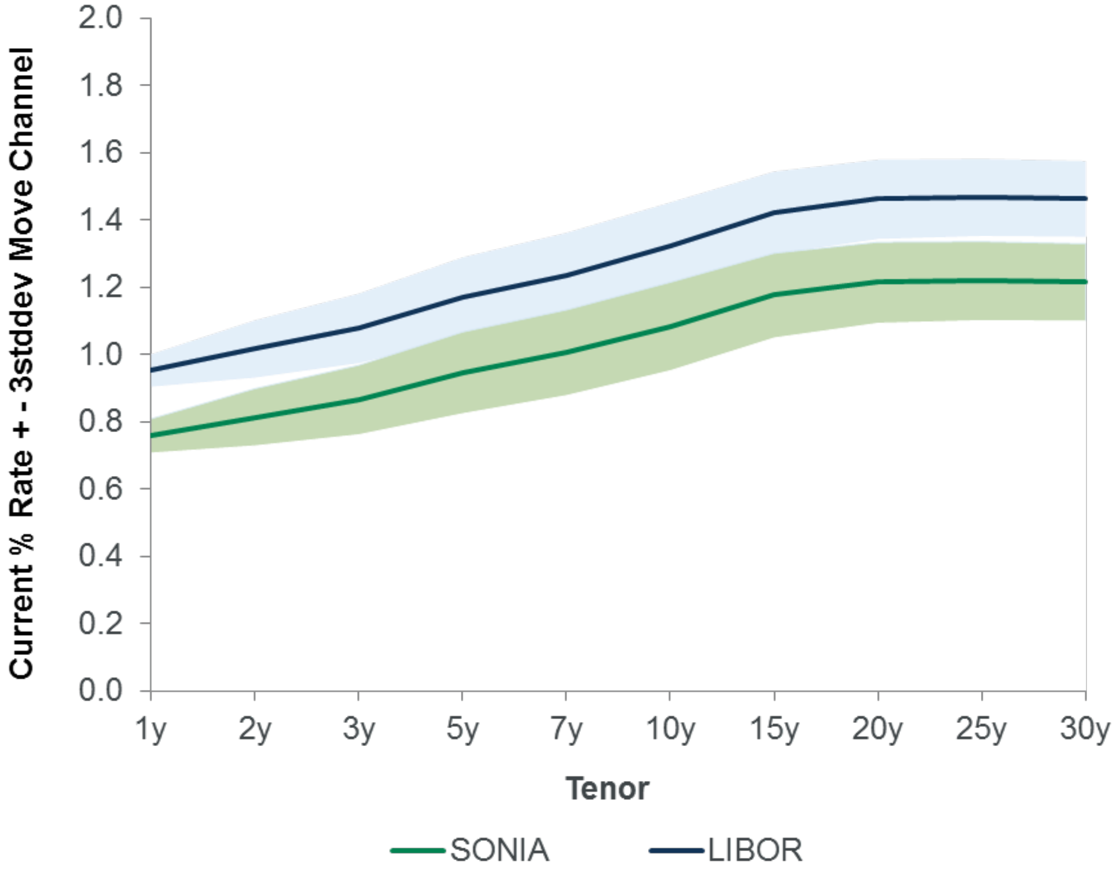
Key Events For UK Insurers

Source: ARRC Progress Timeline, 30 October 2018; ISDA, “IBOR Global Transition Roadmap 2018”, 1 February 2018; EMMI, “EURIBOR and EONIA reforms,” 26 February 2018

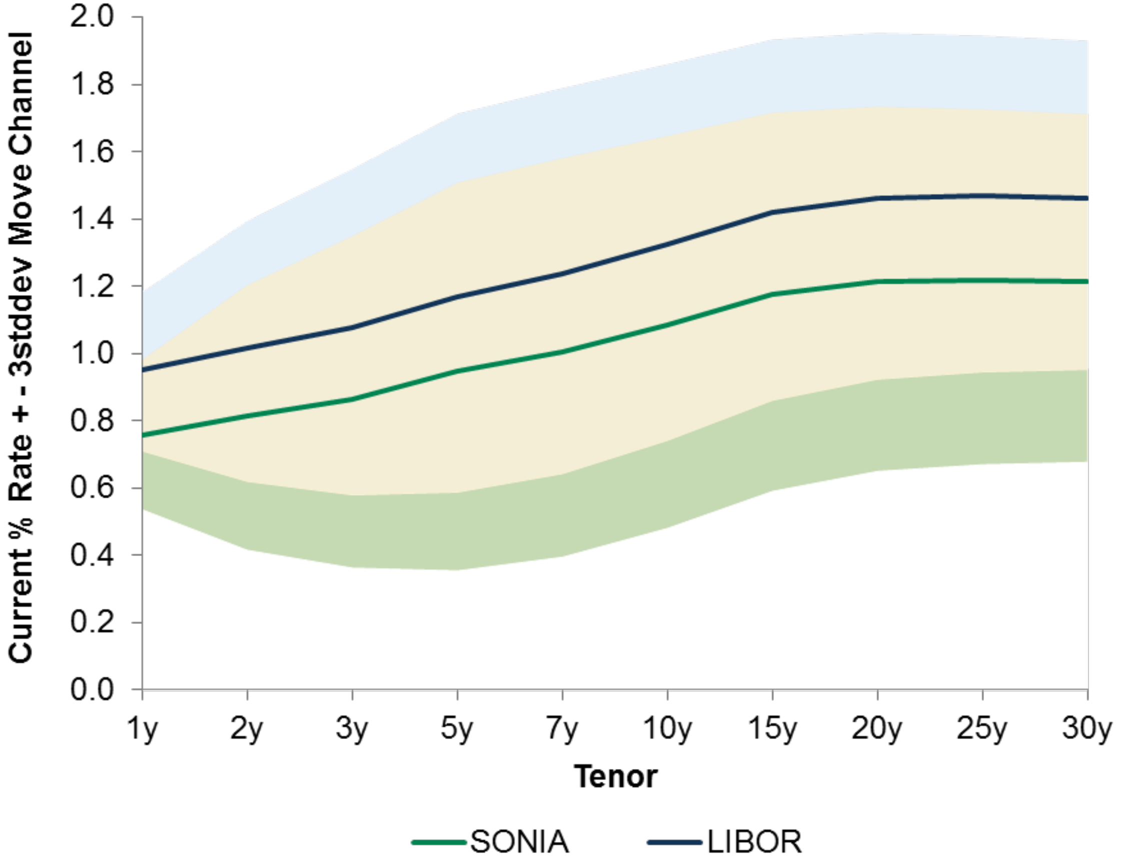
LIBOR / SONIA Market Overview

LIBOR / SONIA – Curve Distribution

SONIA & LIBOR Curves (Day on Day)



SONIA & LIBOR Curves (Month on Month)



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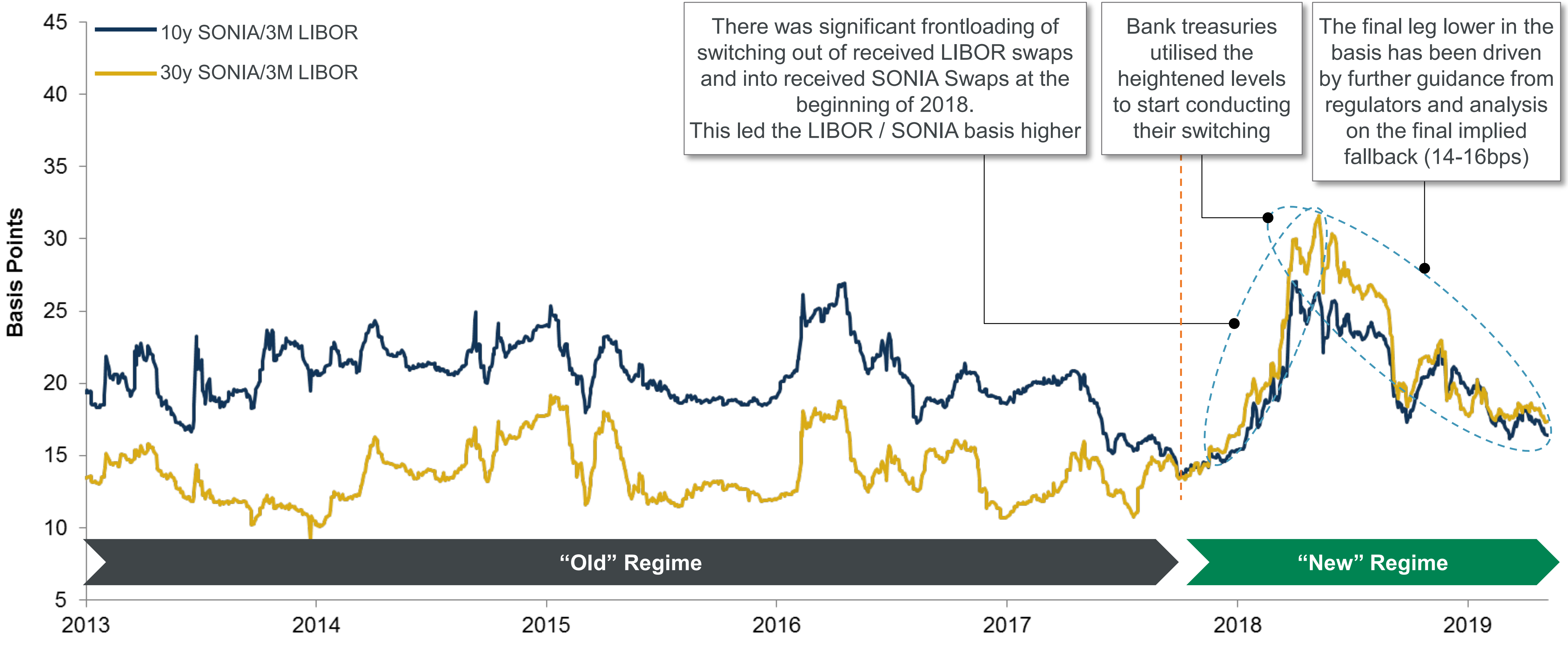
LIBOR / SONIA Basis – Recent History



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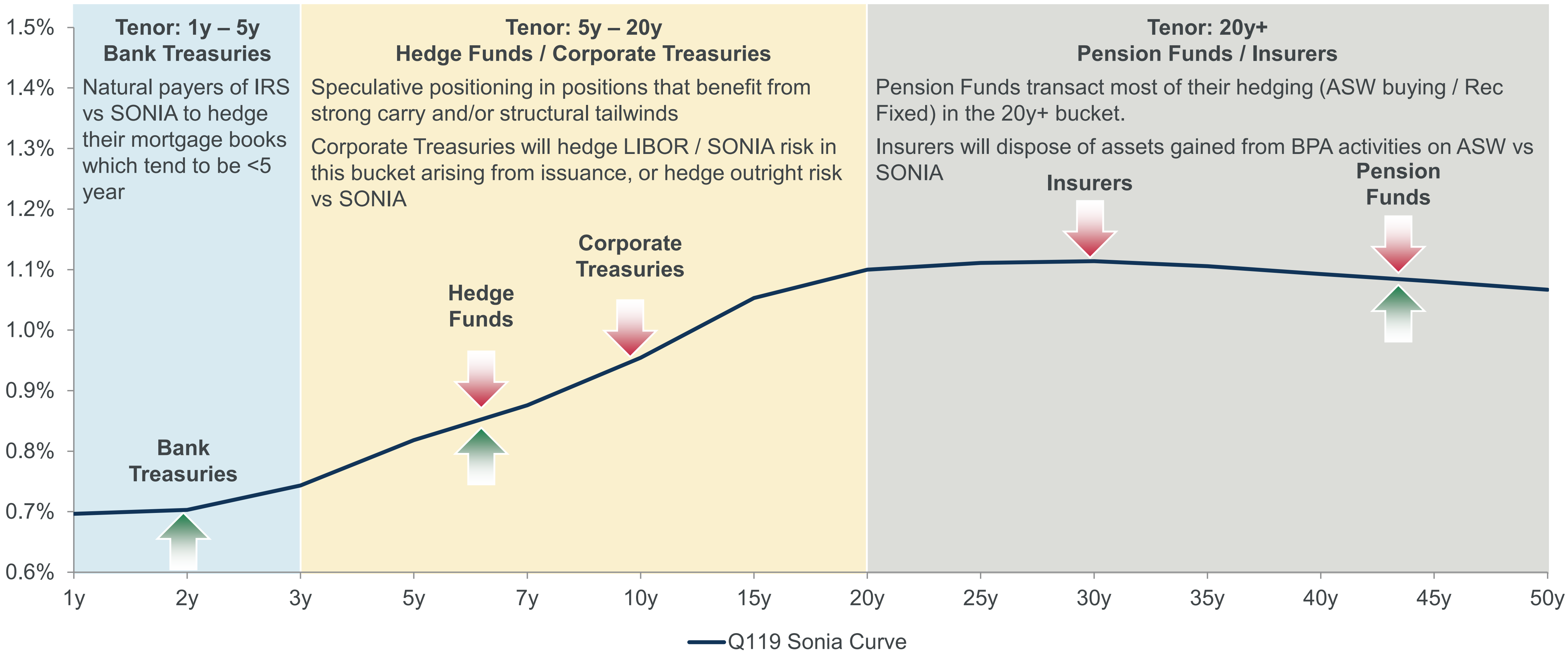
LIBOR / SONIA – Market Participants



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An Insurer’s Perspective

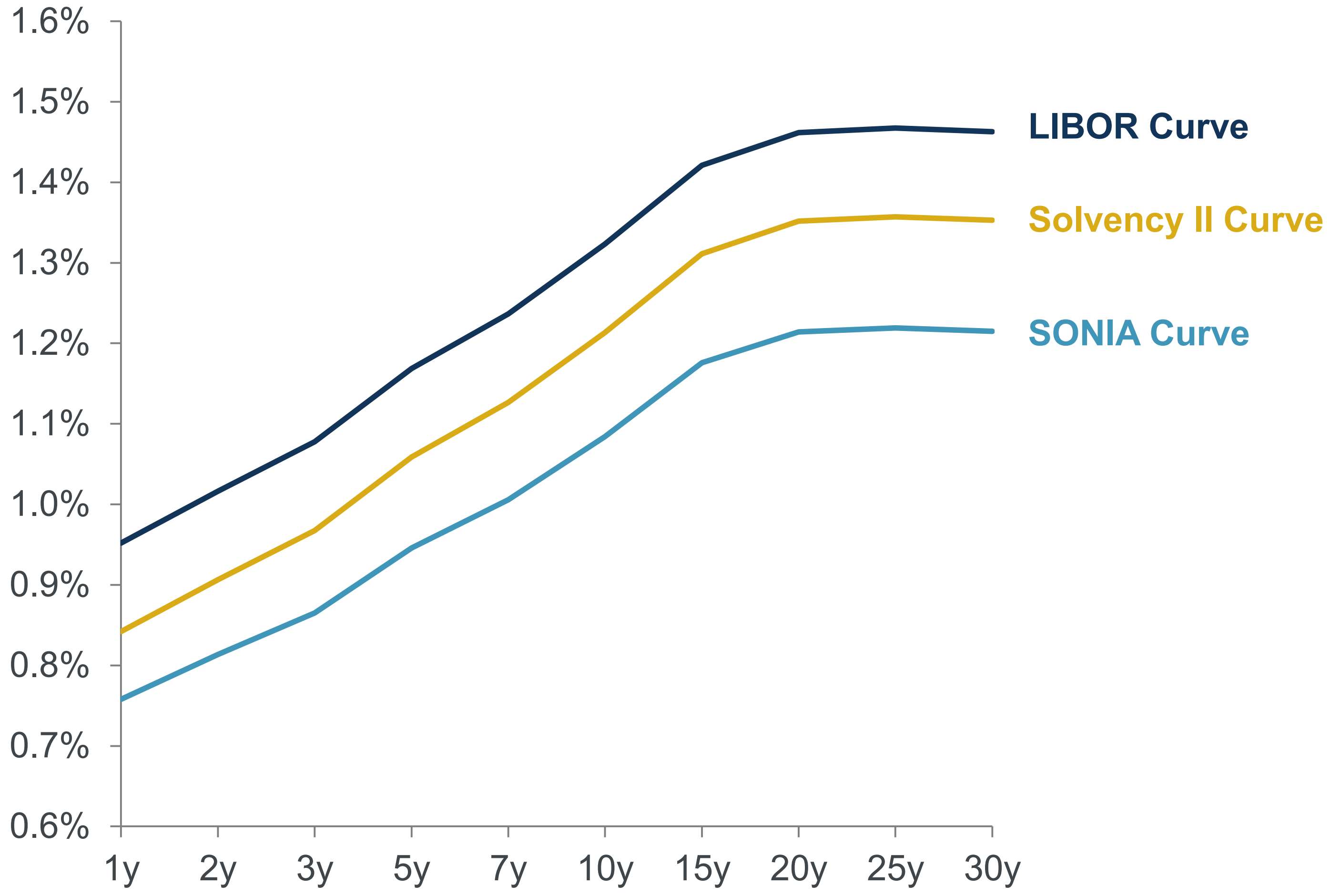
Preparing for IBOR Transition

‘Dear CEO Letter’

- The PRA & FCA wrote to the CEOs of large banks and insurance companies in Sep 2018 in relation to the likely discontinuation of LIBOR
- The purpose of the letter was to seek assurance that senior managers & boards understand the risks associated with the transition to alternative reference rates by the end of 2021

Overview of IBOR Transition Projects

Question Marks over SII RFR Curve



Timing

Level

Transitionals

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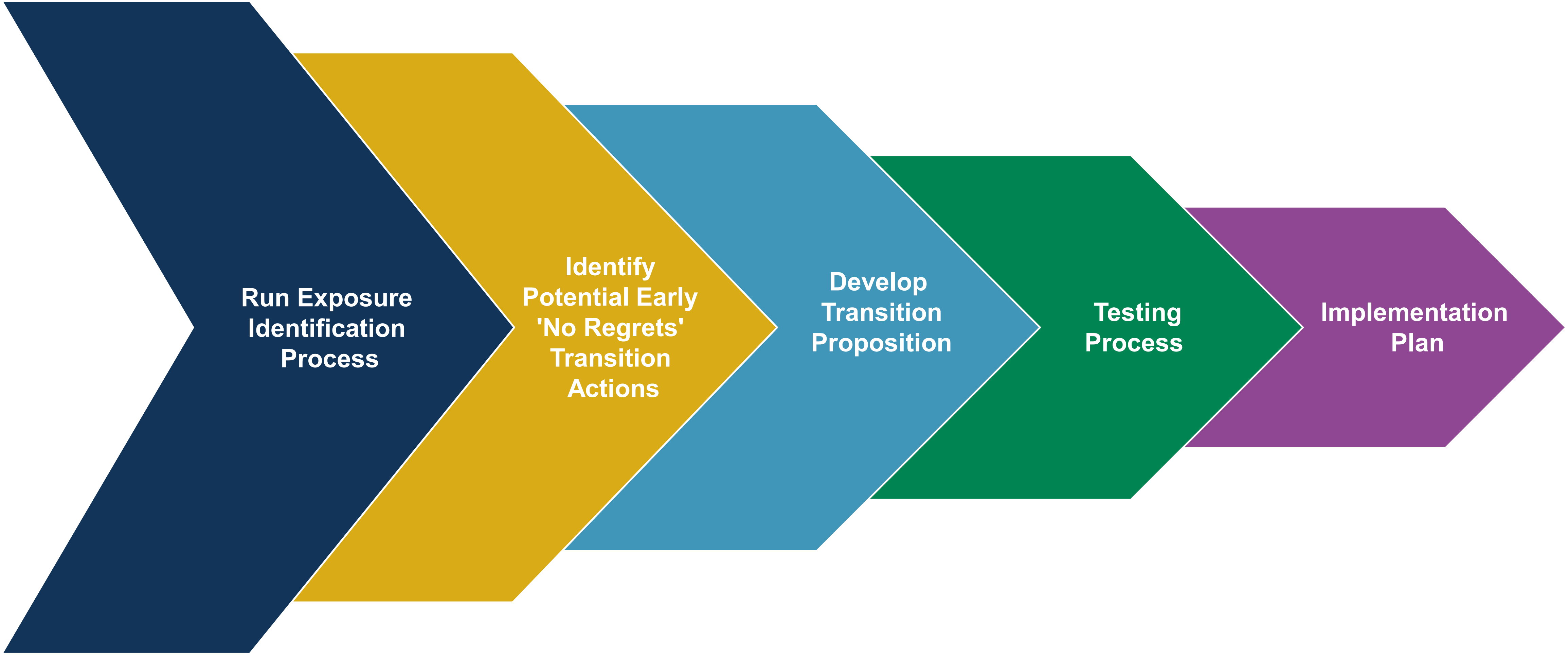
Capital Considerations

Overview of General Transition Process



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Implementation Considerations for Post-IBOR Hedging Strategy

Regulatory Timeframe	• Statements by the FCA suggest LIBOR can be expected to be discontinued by the end of 2021 • Lack of clear timeline from EIOPA on transition for RFR • EMIR regulations require IM on all new bilateral swaps (including SONIA swaps) entered into from September 2020
Basis Risk	• What is the size of the LIBOR/SONIA basis risk and potential capital impact of transitioning to SONIA-based instruments before SII discount curve is redefined?
Market Liquidity	• How much is transacted per week across relevant tenors? • What's an acceptable bid/offer level and suitable execution timeframe?
Transaction Costs	• Where is LIBOR/SONIA basis trading vs expected fallback levels? • Where does the legacy hedges break even?
Collateral Requirements	• Bilateral vs centrally cleared contracts

ISDA Consultation on IBOR Fallback

Term-rate Adjustments

	Respondents' Rankings	Pros / Cons Discussed by Respondents
Spot Overnight Rate	• Preferred by only 2 respondents (<1.5%)	– Lacks any term structure, associated with high volatility and could have large economic impact – Incompatible with other OIS derivatives – Vulnerable to manipulation and litigation risk
Convexity-adjusted Overnight Rate	• Preferred by only 2 respondents (<1.5%)	
Compounded Setting in Arrears Rate	• Preferred by the vast majority of respondents (almost 90%)	+ Reflects actual daily interest rate movements during the relevant period + Less volatile than spot overnight and mirrors the structure of the OIS market – Info needed to determine the rate not available at the start of the period, posing operational challenges that may impede take-up
Compounded Setting in Advance Rate	• Preferred by 11 respondents (<8%)	+ Similar advantages to setting in arrears + Data is available at the start of the period, so could be operationally easier – Backward-looking nature is disadvantageous and could result in value transfers

Credit-spread Adjustments

	Respondents' Rankings	Pros / Cons Discussed by Respondents
Forward Approach	• Preferred by 1/3 of respondents but strictly opposed by others	+ Would minimize value transfers at the time of the trigger (potentially reducing legal risks) and should reflect current market spreads – Relies on market liquidity and data which may not exist at the time of trigger, in addition to being operationally complex – Vulnerable to market distortions and manipulation around the time of transition – Could lock in a spread based on a disrupted market
Historical Mean/ Median Approach	• Preferred by a significant majority (over 2/3) across different respondent groups • Most who preferred the forward approach ranked the historical mean/ median approach 2nd and would support it	+ Robust and most resistant to manipulation + Shorter lookback period could better reflect market conditions and have data readily available, be more resistant to manipulation, and minimize value transfer – May create value transfer or market disruption at time of trigger by not reflecting contemporaneous market conditions, as well as potential hedging issues – One-year transition would be operationally complex
Spot-Spread Approach	• Preferred by only 4 respondents (<3%)	+ Simple and somewhat resistant to manipulation (though others pointed out it may still be susceptible to manipulation) – Might capture unusual market conditions during a period of market dislocation

Preference indicated by majority of respondents

Details to follow

Source: "Anonymized Narrative Summary of Responses to the ISDA Consultation on Term Fixings and Spread Adjustment Methodologies" (The Brattle Group, prepared for ISDA, 20 December 2018)

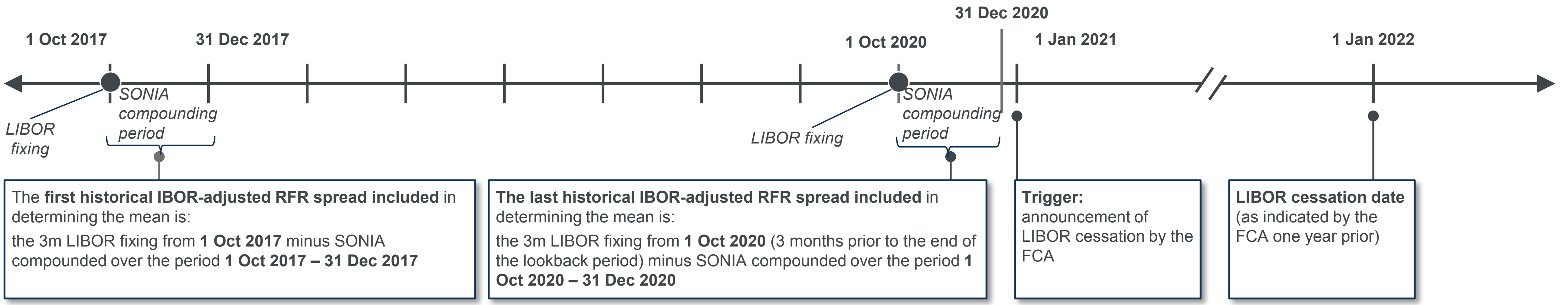
ISDA Fallback – Illustrative Calculation

Example Assumptions – Historical Mean Spread applied to an adjusted RFR calculated in Arrears

- Underlying IBOR = 3m GBP LIBOR (“**3mL**”)
- Alternative RFR = **SONIA**
- Historical lookback period selected by ISDA = **3 years**
- Announcement of LIBOR cessation by the FCA (the “**trigger**” event) occurs **1 Jan 2021** (i.e., the date prior to announcement, and the most recent data point included in the historical lookback period, is **31 Dec 2019**); LIBOR will no longer be published after **1 Jan 2022**

Lookback period from 1st Jan 2022	Implied SONIA3s (bps)
3y	15.7
5y	13.7
6y	14.0
7y	13.7
10y	16.2

Illustration of Credit Spread Calculation



SOURCE: ISDA, "Consultation on Certain Aspects of Fallbacks for Derivatives Referencing GBP LIBOR, CHF LIBOR, JPY LIBOR, TIBOR, Euroyen TIBOR and BSSW," 12 July 2018 (https://www.isda.org/2018/07/12/isda-publishes-consultation-on-benchmark-fallbacks/). The implied lookback levels are based on GS estimates and are for purely illustrative purposes.

LIBOR / SONIA Transition Strategies

Key Strategies and Considerations

	Description	Pros	Cons	Cost Considerations	IM	VM
1 Do Nothing	• Leave legacy position and LIBOR sensitivities • Rely on fallback provisions in 2021	✓ No outright transaction costs incurred	✗ Complete reliance on ISDA fallback ✗ Significant volatility if there is trading ahead of the backdrop ✗ Potentially high cost of switching later	• Uncertain. Exposure to basis widening i.e. lock in a worse rate on transition from LIBOR to SONIA	✗	✓ Cash and Gilts
2 Switch from 6mL to SONIA Cleared Swaps	• Unwind legacy LIBOR swap (Insurer rec cash) • Replace with SONIA cleared via LCH	✓ Reduction in bilateral counterparty risk ✓ No reliance on ISDA fallback ✓ Industry trend towards clearing	✗ Potential own funds volatility from moving part of positions to SONIA before the liability benchmark change	• Unwinding a position under cash and gilt CSA carries a [SONIA + 10] cost • Basis risk charge	✓	✓ Cash Only
3 Switch from 6mL to SONIA Bilateral Swaps	• Unwind legacy LIBOR swaps • Replicate risk with a smaller portfolio of SONIA swaps (reducing the overall notional and releasing any NPV)	✓ Ability to continue posting Gilts as collateral in a bilateral netting set ✓ Release cash/MtM from existing swap positions	✗ Adding on market bilateral swaps results in a charge given balance sheet impact of increased probability of posting Gilts	• Re-couponing a position under cash and gilt CSA carries an increased cost • Basis risk charge	✗ Subject to Margin Rules	✓ Cash and Gilts
4 Bilateral Basis Swap Overlay	• Leave all legacy positions unchanged, retaining LIBOR sensitivities • Directly hedge LIBOR / SONIA basis risk by entering into an ATM basis swap (6m£ LIBOR vs SONIA)	✓ Swaps stay bilateral so no liquidity outlay ✓ No need to touch back-book of swaps	✗ Reliance on ISDA fallback ✗ Need to rebalance and OIS/LIBOR risk changes due to MtM in existing swaps ✗ Does not release cash/MtM from existing swap positions	• Basis risk charge • Restructuring post in-scope for margin rules would necessitate posting IM	✗ Subject	✓ Cash and Gilts
5 Gilts	• Unwind LIBOR exposure and replace MtM with Gilts	✓ No further linkage to LIBOR and no necessitation on document changes	✗ May not be able to maintain same PV01 given initial cash outlay ✗ Incur Bid/Offer on Gilts	• Initial Cash Outlay	NA	NA

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