

Tackling LIBOR transition

FS NED virtual series
Staying connected



Welcome

Presenters



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Welcome

Agenda

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Q&A

PwC has been at the forefront of the LIBOR Transition

2

South African
D-SIBs
supported

10+

G-SIBs
supported

100+

Completed and
ongoing **global**
engagements

40+

Leading Banking
organizations
served globally

10

Leading insurance
clients served
globally

Insights from industry and regulatory linkages

We're closely engaged with multiple trade associations and alternative reference rate working groups. As industry thought leaders, we've led multiple LIBOR forums and surveys. This session has been crafted from our insights and lessons learned on challenges, as well as opportunities these create on the road ahead.

Our leadership participation includes:

- Industry groups such as SFA, ISDA, LSTA, SIFMA, AFME and LMA
- Subgroup members of the ARRC, WG on Sterling RFRs, WG on Euro RFRs, SORA WG in Singapore, Taiwan Bankers Association, the Indian Banking Association and invitees to the **SARB MPG Working Group**
- Engagement with **SARB**, FASB, SEC and IASB

LIBOR 101






What is LIBOR?

- Is an acronym for the **London Interbank Offered Rate** and has been called “the world’s most important number”
- Is a “reference” (or benchmark) *interest rate*
- Was first published on January 1, 1986
- Is published daily at *approximately* 11:45 am (Greenwich Mean Time) by the ICC Benchmark Administration (**IBA**) (“the administrator”)
- Is determined by **Panel Banks** based on the rate they would lend to one another - LIBOR is *not* entirely based on real transactions
- Is calculated by Panel Banks using a “waterfall” methodology
 - ◆ Level 1: Transaction Based
 - ◆ Level 2: Transaction-Derived
 - ◆ Level 3: Expert Judgment
- Is issued in five currencies and in seven different maturity dates
 - ◆ USD, EUR, JPY, GBP, and CHF
 - ◆ Overnight, 1 week, 1 month, 2 months, 3 months, 6 months, and 12 months
 - ◆ Combination of 5 currencies and 7 maturities means that **35** different LIBOR rates are calculated (which highlights the complexity of the effort)



From IBOR to Alternative Reference Rates

An overview of the preferred risk-free reference rate (RFR) for each jurisdiction.

	 SOFR	 SONIA	 €STR	 SARON	 TONA
Selected Alternative Rate	SOFR (Secured Overnight Financing Rate)	SONIA (Reformed Sterling Overnight Index Average)	€STR* (Euro Short-Term Rate)	SARON (Swiss Average Rate Overnight)	TONA* (Tokyo Overnight Average rate)
Working Group	Alternative Reference Rates Committee (ARRC)	Working Group on Sterling Risk-Free Rates	Working Group on Euro RFR	National Working Group on Swiss Franc reference rates (NWG)	Cross-Industry Committee on JPY Interest Rate Benchmarks
Administrator	Federal Reserve Bank of NY	Bank of England	European Central Bank	SIX Swiss Exchange	Bank of Japan
Data Source	Triparty repo from FICC, GCF from FICC bilateral	Form SMMD collected by BoE	MMSR	CHF interbank repo	
Nature	Secured	Unsecured	Unsecured	Secured	Unsecured
Methodology	Fully transaction- based	Fully transaction- based	Fully transaction- based	Transaction and binding quotes-based	Fully transaction- based
Overnight vs. Term	Overnight	Overnight	Overnight	Overnight	Overnight
Term Rate Availability	Targeted for 1H 2021, moved up from original target date of EOY 2021	Live since January 11, 2021	WG recommended OIS quotes based methodology for forward term rate	Use of compounded SARON recommended - robust term rate seen as unlikely	Planned: a vendor to calculate term rates has been selected and publication is expected by mid 2021
Go-Live Date	April 3, 2018	April 23, 2018	October 2, 2019	Published since 2009	Published since 1992

*Expected to co-exist with local IBOR in multi-rate environment

FICC: Fixed Income Clearing Corporation, GCF: General Collateral Financing, MMSR: Money Market Statistical reporting, SMMD: Sterling Money Market data collection reporting

State of the market



Different product categories face different paths to rate remediation and new product offerings

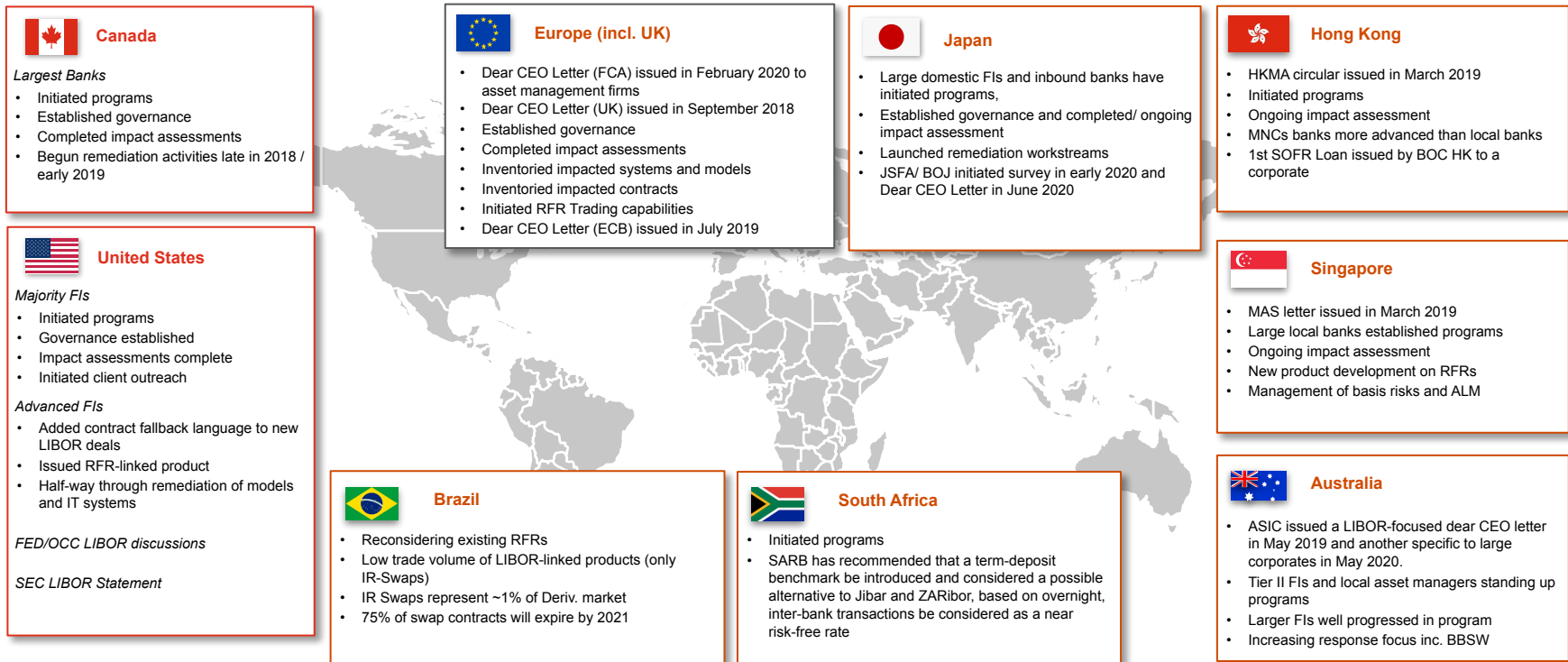


	Level of Exposure (in USD Trillions)*	Level of Exposure (maturity >2021 in USD Trillions)*	Relative risk ranking of contract modification route for legacy products	New RFR Products
Derivatives	190	34	Bilateral negotiation IBOR Fallback Protocol	<input type="checkbox"/>
Business Loans	3.4	0.6	Bilateral negotiation	<input type="checkbox"/>
Consumer Loans	1.3	0.5	Unilateral (Lender Rights)	<input type="checkbox"/>
Bonds	3.1	0.3	Multilateral	<input type="checkbox"/>
Securitizations	1.8	0.3	Multilateral	<input type="checkbox"/>

¹Source: Second Report The Alternative Reference Rates Committee - as of YE 2016

Global IBOR Transition Programs At a Glance

The IBOR transition programs have different levels of maturity across the globe. Most of the banks in North America and Europe have already completed their impact assessment and started their remediation, while impact assessments are still ongoing or just initiated for banks in APAC.

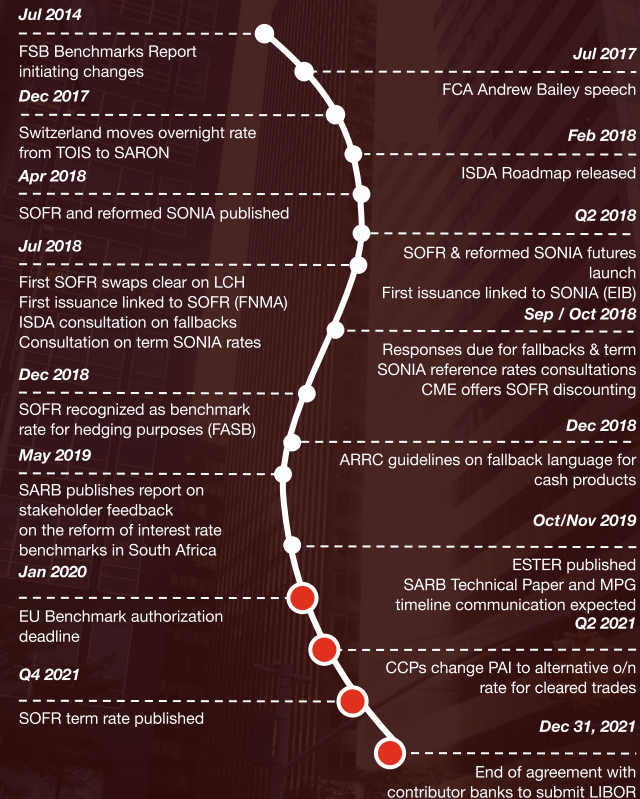


Source: PwC

Market Update - South Africa

	Rate	Key Features	Administrator	Working Group
Proposed Alternative Rate	Reformed JIBAR (transitional)	Transaction based rate - comprising NCDs and NBFC deposits	SARB (Alternative Rates)	MPG (Reference Rates)
	Undefined Risk inclusive reference rate	Risk-inclusive reference rates - used for the pricing of unsecured on-balance sheet (Jibar-linked) items		
	Sabor Money Market (Reformed SABOR)	Eligible overnight unsecured funding from all banks, including funding obtained at the prevailing repo rate, but excluding overnight FX swaps		
	Term deposit benchmark (alternative to reformed JIBAR)	Leverage deposit data more exhaustively (interpolated benchmarking methodology) - considered a fall-back when there is insufficient data within std maturity buckets		
Proposed Risk Free Alternative Rate	ZARibor	Eligible overnight interbank transactions from all banks (considered to be near Risk Free)		
	South African Overnight Index Average (ZARONIA)	Unsecured overnight rate based on call deposits rate to be used for cash and derivative instruments.		
	South African Secured Financing Rate (ZASFR)	Secured rate calculated based on supplementary repos conducted with the SARB as well as o/n funding in the GB repo market.		
	Government Bond (GB) Repo	Overnight risk free rate		

LIBOR & Other Reference Rate Reform Timeline



Transition impacts

What makes the transition from LIBOR so difficult?

LIBOR transition is a structural **market / business change** - rather than a regulatory driven mandate. Many market participants fail to appropriately make this distinction.



Ubiquitous

Everyone, everywhere

- \$200 trillion of bonds, loans and derivatives indexed to USD LIBOR
- \$350+ trillion across USD, GBP, EUR, CHF, JPY
- All parts of the organization affected: business, operations, treasury, risk, etc.
- Impacts all forms of FS and non FS companies, social entities, governments



Uncertainty

High degree of uncertainty over short time frame

- Evolution of term rates
- Different LIBOR currencies, products moving at different speeds
- Depth and breadth of liquidity
- **Quality, timing of fallback language**
- Existence and adoption of derivatives, other reference rates
- Role of regulators is evolving
- Capacity of industry to handle

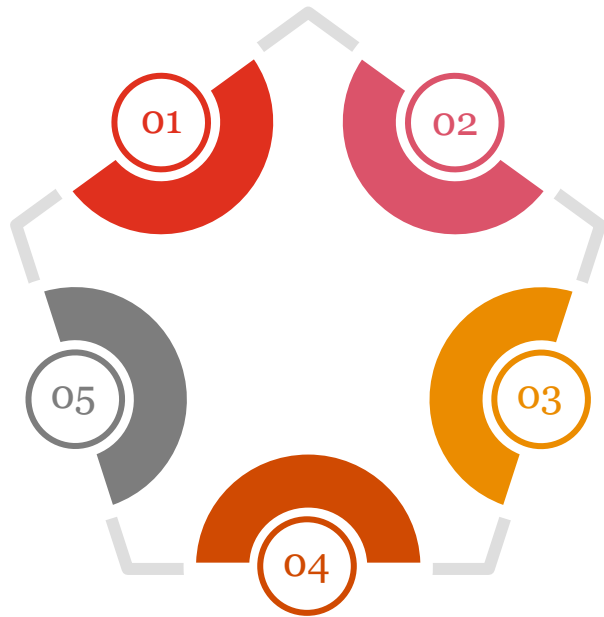


Operationally Complex

Dynamic, operationally intensive and technical problem

- Functionally different curves that develop at different times
- Dynamic- dependencies on market evolution
- Dependencies on accounting, tax and regulatory relief, calculation of value transfer
- Multijurisdictional

How are the new risk-free rate products different from an operational support perspective?

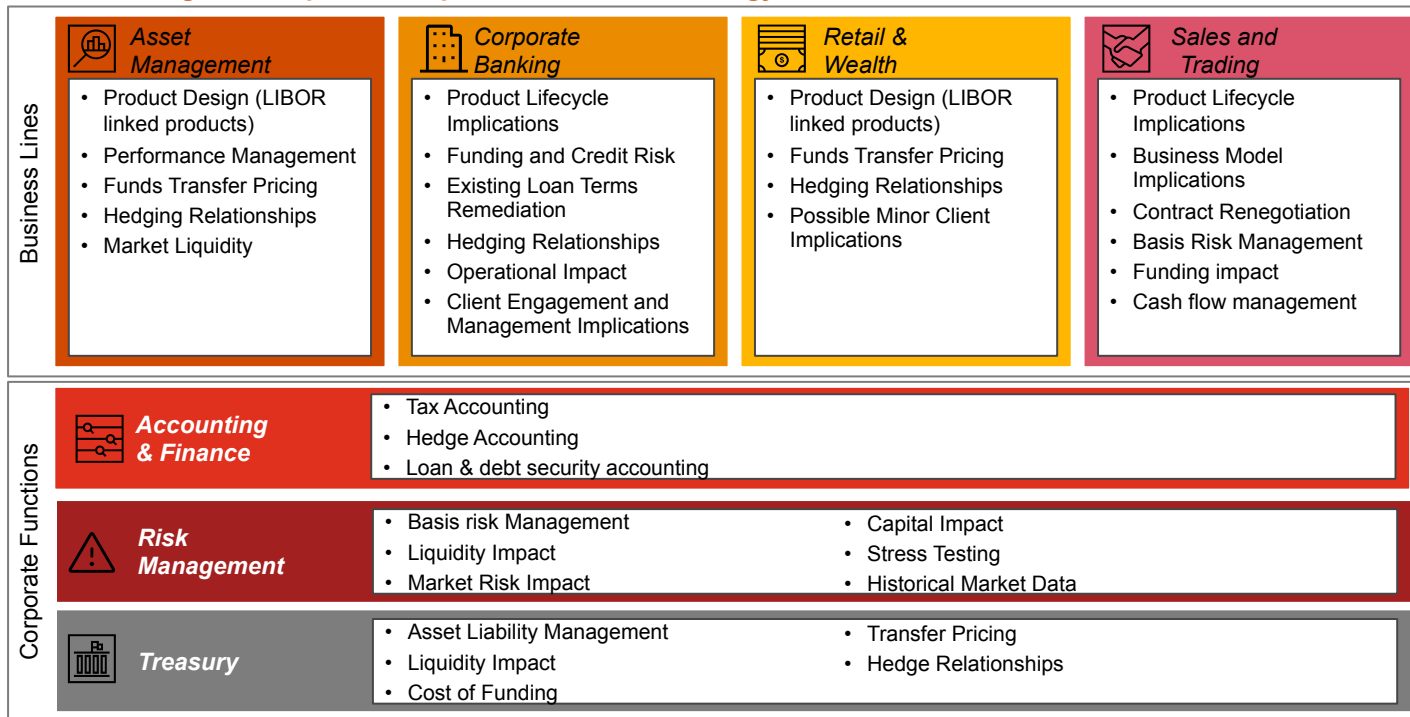


- 01 Term vs. overnight rates**
LIBOR as forward starting term rates, bank credit risky; Reformed rates as overnight arrears setting secured rates
- 02 Publication time**
LIBOR published 11am London on T; Reformed rates T+1 for prior day transactions at different times.
- 03 Reference rate linkage in contracts**
LIBOR term rates directly referenced; Reformed rates payouts typically linked to averaged or compounded rates paid periodically
- 04 Accruals**
LIBOR term rates known at the start of the reset period; Accrual based on incurred to date, or pro-rata share of market implied forward
- 05 Evolving Market**
LIBOR largely known; New markets have evolving term structure, product innovation, liquidity, supply & demand

How this will impact your entire organisation?

As your organisation begins to internalise the reference rate reform, it is important to understand the organisation-wide impact it will have – impacting business strategies, client management, operational processes and technology infrastructure across the board.

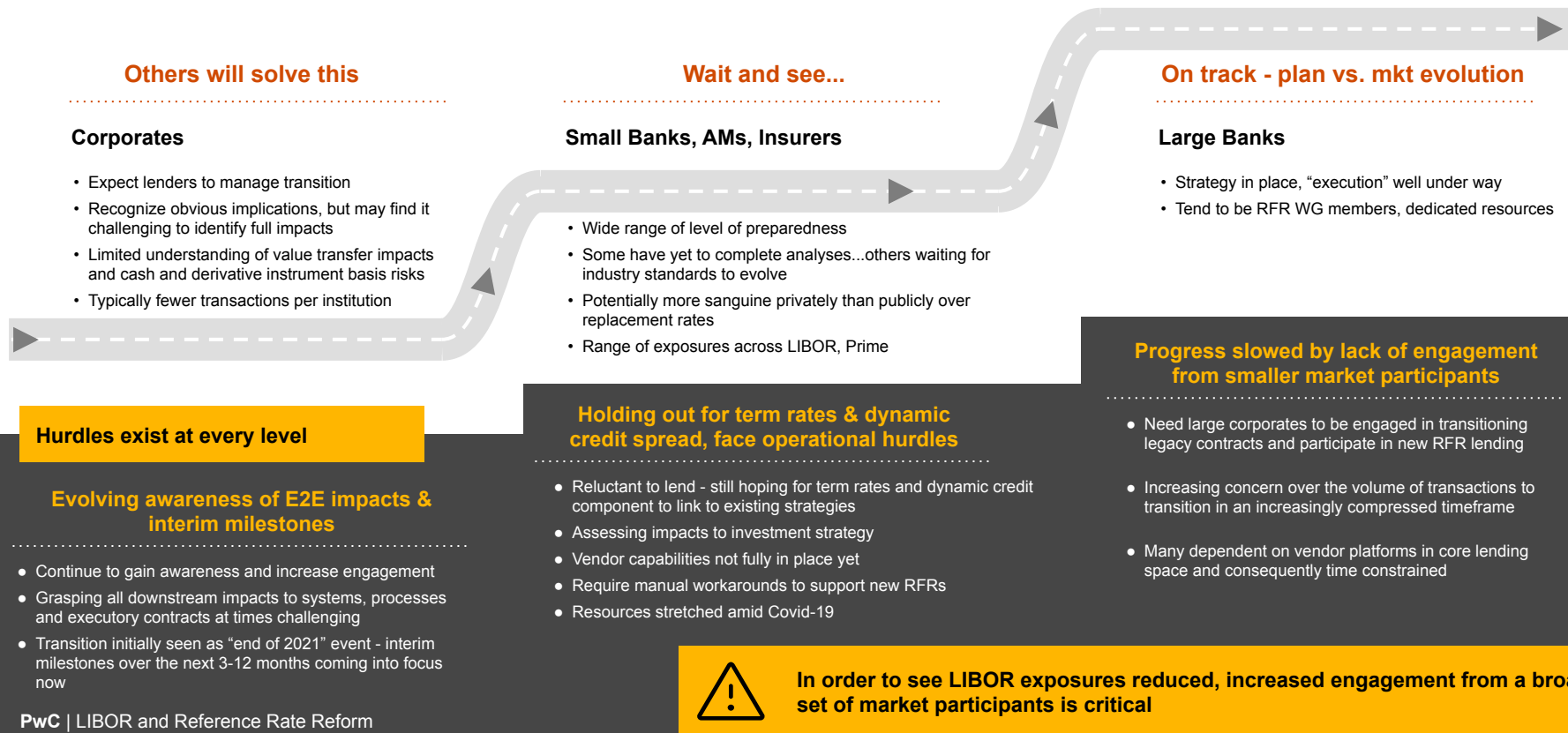
- A change in the reference rate will have a large impact across all key business lines within banks, insurers and asset managers, as well as major corporate functions
- Trading, Treasury, Risk and Finance are expected to bear the brunt of the impact in many organisations due to the pricing and risk management implications
- **Legal, Documentation and Client Relationship teams** will be involved heavily due to the remediation of LIBOR contracts and managing contract risk of fallback provisions
- As LIBOR touches all areas of the firm, not planning ahead and including the appropriate stakeholders may lead to a systemic impact felt across the organization



Market progress

Speed of transition is determined by the slowest movers

Firms' level of preparedness appears generally commensurate with their perceived level of LIBOR exposure.



LIBOR Transition: What organizations are doing



► Mobilise a LIBOR Transition program, governance structure, and workstreams. Draft overall transition roadmap and budgets. Define transition scenarios and develop risk mitigation strategies.

Program Structure, Governance and PMO



► Conduct qualitative and quantitative impact assessments across all business areas and functions. Develop process to monitor LIBOR exposure on an ongoing basis.

Impact Assessment



► Define business strategy for transitioning legacy products and developing new RFR products, including evaluation of economic impacts and new product approval processes.

New Benchmark Markets & Product Transition



► Identify, inventory, and digitize affected contracts. Develop contract remediation strategy for different types of contracts & re-negotiate as appropriate. Update contract language for new deals.

Contract Remediation



► Develop client strategy, including client segmentation, to take advantage of client and relationship opportunities. Manage internal and external outreach, education, and communications.

Client Strategy, Outreach and Communications



► Define requirements for and implement changes to systems and processes, including vended solutions, market data feeds, and business processes to enable alternative RFR processing.

Systems & Process Changes



► Update and re-validate pricing and risk management models, including curve construction, discounting, and valuation.

Models & Risk Management



► Update financial reporting and accounting processes in accordance with industry guidance. Evaluate tax impacts and update strategy to mitigate impacts.

Financial Reporting & Tax

PwC - How can we
help you?

Moving away from LIBOR - The PwC advantage

We're the advisor of choice globally

We hold a **market leading position** supporting clients through their LIBOR transition programs. At PwC we're fully engaged with our sell-side and buy-side clients, as well as with central authorities. Our teams are working with organizations both on LIBOR transition programs and business program support and legal services. As a "one stop shop", we're recognized for the value we bring through relevant perspectives on all aspects of a LIBOR transition program.



Successful G-SIB and FS track record

The PwC network is well coordinated, with lead partners in the US, UK, EMEA, APAC and the rest of the world. We bring the firm's global thinking together to support LIBOR transition programs at G-SIBs and large financial institutions.

The right mix of technology and people

Clients benefit from both PwC's proprietary digital accelerators and tools offered via JBRs. This equips us to employ the right technology for the right use case, remain highly scalable and cost effective and adapt to regional differences.

Our industry and regulatory insights

We're closely engaged with trade associations and alternative reference rate working groups. As thought leaders, we've hosted multiple LIBOR transition events such as roundtables and webinars. Clients benefit from our insights on challenges as well as opportunities on the road ahead.

Capabilities of our global LIBOR transition practice

Our dedicated working group consists of experienced professionals with industry leading banking and financial instruments knowledge, enabled by customized technology. PwC's LIBOR transition specialists assist clients across multiple transition workstreams and dimensions, tackling change with limited organizational disruption.

Enablers across the project cycle

- AI and NLP tools for contract discovery, digitization and analysis
- LIBOR Quantitative Analysis tool
- LIBOR Impact Assessment Question Library
- Playbooks and digital tools for contract remediation, client outreach and communication



Industry and regulatory engagement

- Industry groups such as ISDA, SFA, LSTA, SIFMA, AFME and LMA
- Subgroup members for the Alternative Reference Rate Committee, the WG on Sterling RFRs, the WG on Euro RFRs, SORA ^{WG} in Singapore, Taiwan Bankers Association and Indian Banking Association



50

Countries have PwC LIBOR transition teams

75+

Clients Supported globally

100+

Completed and ongoing global engagements

10+

G-SIBs supported

Our LIBOR transition footprint now, and growing...

40+

Leading BCM organizations served globally

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