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LIBOR- an introduction and farewell

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Rise and Fall

The fall of Libor has been well-documented, not untypically its demise was predicated upon the more obscure conditions of its rise. Libor began with the syndicated loan market of the late ‘60s. Borrowers wished to raise large amounts in USD, but US banks were restrained from raising these sums onshore by the deposit rate caps mandated by “Regulation Q”. Scenting profit, London banks formed syndicates to recycle offshore USD deposits into USD loans, risk-shared and free from the US domestic regulation. The adverse credit outlook of emerging market borrowers and prevalent interest-rate volatility inclined the syndicates to lend at term on a floating rate, a relatively new financial concept. Mitigating basis risk against US Treasury rates, the syndicates elected to poll their members to create a self-adjudicating average rate. Markets referencing the newly-christened LIBOR quickly became orders of magnitude larger than its first application, feeding on its own burgeoning liquidity LIBOR was on its way to becoming “the world’s most important number”.

Interest Rate Swaps, by far the largest application of LIBOR, are illustrative of its overextension. An instrument intended to solely hedge interest rates, inherently contained a significant exposure to bank funding levels (irrespective of counterparty default). By no means the first, but certainly the dominant financial benchmark, the vast majority of IBOR emulators[1] replicated the compromised LIBOR DNA. The financial crisis of 2008, and ensuing chaos in perceived bank credit, rapidly exposed this genetic fault which had gone at least unremarked by academia and the market for some decades.

In summary, Libor began as the expedient solution to the particular problem of a particular time, it conquered by virtue of convenience. It became the world’s most discredited benchmark due to the dangerous combination of its laissez faire design and the lure of annual bonuses. The Wheatley Review recognised the need

[1] Outside London’s currency area and jurisdiction, at least 13 similar poll- or quote-based IBOR-style benchmarks- EURIBOR, TIBOR, HIBOR, MIBOR, SIBOR et al.

for urgent reform, the FCA and its newly-appointed administrator ICE Benchmark Administration accordingly made substantive improvements in the benchmark's governance and controls. The Financial Stability Board's July 2014 report on Reforming Major Interest Rate Benchmarks, went further by recommending that Libor submissions be anchored in actual, verifiable transactions. This proved to be a dose of reality too far, further investigation by the FCA confirmed that the underlying interbank loan market was "no longer sufficiently active" i.e. non-existent[2]. Even subject to rigorous control, the twenty Libor-submitting banks had no choice but to use their expert judgement to effectively make up the numbers.

Demise

As of mid-2018, financial contracts referencing LIBOR totalled approximately USD 400 trillion. Whatever its sins, mere discredit would not slay a dragon of this size. Its St. George came in the shape of the FCA's Chief Executive, Andrew Bailey, in a July 2017 closely-argued speech that may be summed up by his magnificently-understated "LIBOR may be a less useful benchmark than it used to be", he concluded with the FCA's intention to no longer compel banks to submit LIBOR numbers from end-2021. A more mortal blow came a year later:

"I hope it is already clear that the discontinuation of LIBOR should not be considered a remote probability 'black swan' event. Firms should treat it is as something that will happen and which they must be prepared for. Ensuring that the transition from LIBOR to alternative interest rate benchmarks is orderly will contribute to financial stability. Misplaced confidence in LIBOR's survival will do the opposite, by discouraging transition." [3]

For those with a terminal inability to read between the lines, in what seems to be becoming an annual tradition, Mr Bailey delivered the Regulatory coup de grace in July of this year, in his ominously-titled speech "LIBOR: preparing for the end"[4]. After lauding the quite recent progress to transition and emphasising the benefits thereof, Mr Bailey upped the stakes by declaring his intention to unplug LIBOR's life-support at end-2021. The EU Benchmark Regulation obliges national Regulators to assess the "representativeness" of LIBOR, authorising the FCA to suspend publication.

"I urge you not to have misplaced confidence that LIBOR as it exists today

[2] Partly as a result of central bank supplied post-crisis "reserve balances"

[3] https://www.fca.org.uk/news/speeches/interest-rate-benchmark-reform-transition-world-without-libor

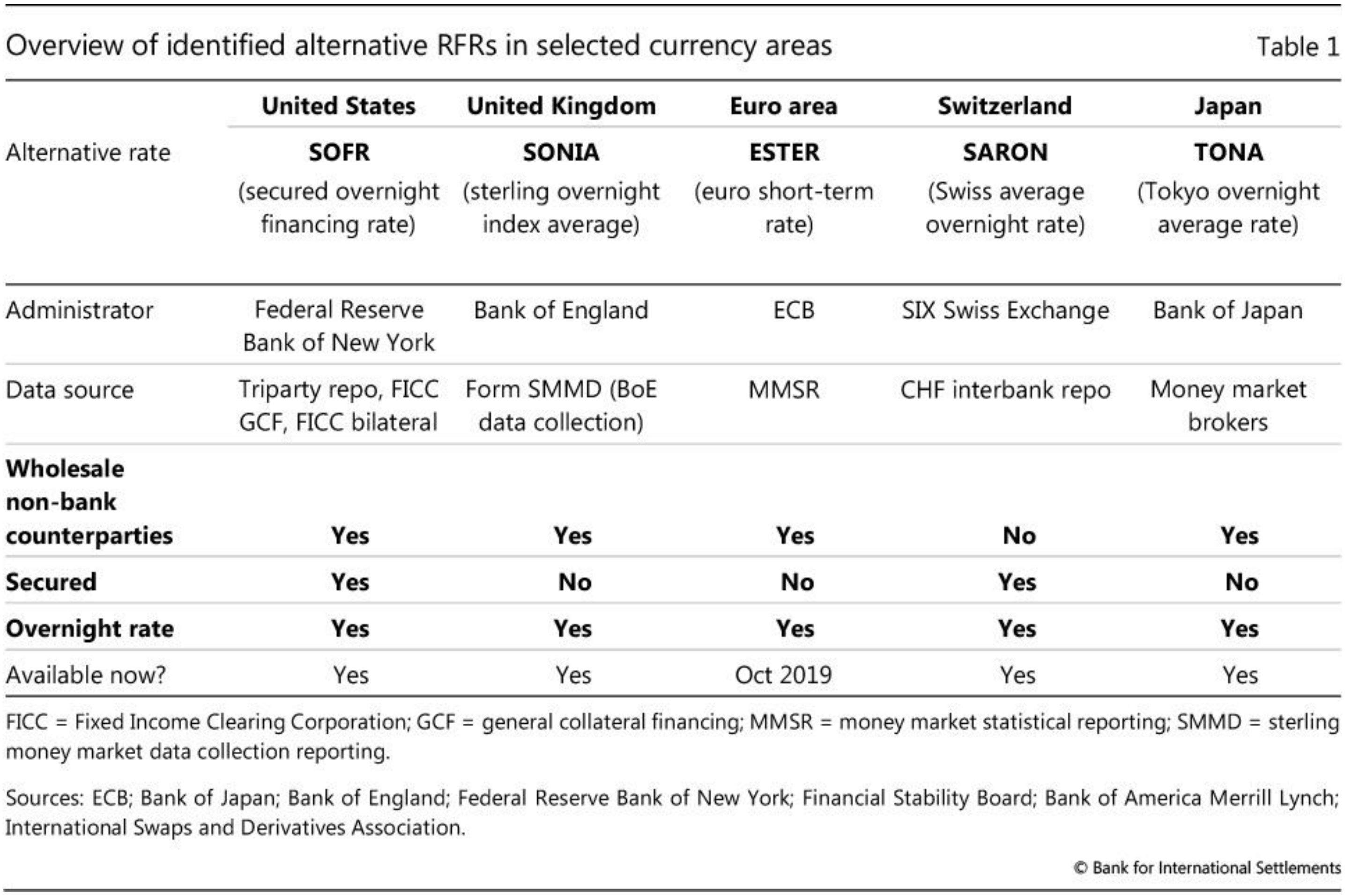
[4] https://www.fca.org.uk/news/speeches/libor-preparing-end

will survive. The FCA will not hesitate to make the representativeness judgments that it is required, under law, to make.”

“Let me emphasise some points again. The base case assumption should be that there will be no LIBOR publication after end-2021.”

USD 9bn (to date) in fines for manipulation and a smattering of prison sentences for a few of those involved may perhaps be brushed off; however, at this point the Regulatory death knell is so loud as to be deafening.

The King is dead - long live the princelings



Overview of identified alternative RFRs in selected currency areas — Table 1

	United States	United Kingdom	Euro area	Switzerland	Japan
Alternative rate	**SOFR** (secured overnight financing rate)	**SONIA** (sterling overnight index average)	**ESTER** (euro short-term rate)	**SARON** (Swiss average overnight rate)	**TONA** (Tokyo overnight average rate)
Administrator	Federal Reserve Bank of New York	Bank of England	ECB	SIX Swiss Exchange	Bank of Japan
Data source	Triparty repo, FICC GCF, FICC bilateral	Form SMMD (BoE data collection)	MMSR	CHF interbank repo	Money market brokers
Wholesale non-bank counterparties	**Yes**	**Yes**	**Yes**	**No**	**Yes**
Secured	**Yes**	**No**	**No**	**Yes**	**No**
Overnight rate	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Available now?	Yes	Yes	Oct 2019	Yes	Yes

FICC = Fixed Income Clearing Corporation; GCF = general collateral financing; MMSR = money market statistical reporting; SMMD = sterling money market data collection reporting.

Sources: ECB; Bank of Japan; Bank of England; Federal Reserve Bank of New York; Financial Stability Board; Bank of America Merrill Lynch; International Swaps and Derivatives Association.

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The Monarch of the Benchmark's terminal disease required an heir to assume the crown. Unsurprisingly, at least in a historical context, the kingdom has fragmented. Following IOSCO's 2013 characterisation of benchmarks as essentially public goods that should be derived from observable activity, global Regulators focussed on the most liquid segment of their local money markets. In practice, this meant universally moving to the larger volumes of the overnight markets, moving beyond the moribund interbank market to include non-bank wholesale counterparties and, in some cases, to include secured transactions such as repos. The Bank of International Settlements have helpfully summarised the main differences between the emergent "Risk Free Rates" (RFRs) for five major jurisdictions in their March 2019 Beyond LIBOR: a primer on the new benchmark rates[5].

Lured by liquidity, all but the Swiss SARON moved beyond interbank rates, and the Swiss and the US SOFR include repo transactions. The adjustments to simple overnight rates are material, interbank rates only comprise 30% of the UK's SONIA. The inclusion of secured rates in SOFR and SARON transforms the typical rate vs. their IBOR predecessors, potentially moving in opposite directions to secured rates. The RFRs are very different from what they replace and quite distinct from one another.

State of the Nation(s)

How are the new rates going to be used and how well will they replace the egregious LIBOR? Banks are typically in the business of maturity transformation, borrowing short term and lending (to some degree) longer. Borrowing overnight and lending long term is a well-founded recipe for disaster. Longer term rates may be derived from overnight rates in arrears or on a forward basis. A three-month backward-looking SOFR rate, a simple geometric average of the preceding daily overnights, may be used by the backward-looking FRN market. Useful, but of little use to those who require more 3/6/ etc. month certainty. Forward looking rates can be obtained from a number of sources: unsecured money market rates, commercial paper issuance etc. These are useful data points, but replicate LIBOR- an illiquid and unclear conflation of funding and risk free rates. Term rates based on derivatives markets would kindly be described as nascent. In the cleared world, SOFR and SONIA-linked contracts were launched on major future exchanges in early 2018, open interest is approximately 1% of their IBOR-linked cousins. While the longer-established OTC market in SONIA OIS swaps is LIBOR-comparable and increasing, other OTC markets lack significant volume. Aside from SONIA, it's a liquidity chicken-egg

[5] https://www.bis.org/publ/qtrpdf/r_qt1903e.htm

conundrum, soon to be resolved by the various IBORs' impending demise.

Regime change

The transition from LIBOR to RFRs is unlike any Regulatory challenge seen to date, in part because it lacks a clear legal mandate. Margin regulations are clear (subject to the vagaries of delay) - comply with a given counterparty by your relevant date or lose the ability to trade with them. Aside from the FCA's undated imprecations of doom, LIBOR's demise lacks an absolute deadline on which to focus minds and budgets.

Perhaps wary of class-action lawsuits, or overwhelmed with the task of developing viable rates, Regulators have shown little appetite for legislative solutions. As minima, successful transition by end-2021 requires the harmonised development of fallback language, the acceptance of term structure calculation where applicable and a concerted approach to hedging, capital, tax and accounting implications. The explicit preference for market-driven outcomes is unlikely to promote cross-border co-ordination; trade associations such as ISDA have been quick to respond, those advising less standardised markets have been necessarily slower. However, Regulators are still regulating, the PRA/FCA September 2018 "Dear CEO" letter required major banks and insurers to prepare a granular, stress-tested transition plan and identify an approved SMCR executive responsible for LIBOR.

LIBOR's ubiquity makes macro-effects hard to measure. The index is implicated in a vast panoply of products: derivatives, loans and securities and combinations of each. LIBOR is entrenched across the enterprise: capital markets, banking, asset management, pricing and risk models, accounting and tax treatments. Just to take the last of that abbreviated list, material amendments may be deemed to be a disposal of the existing and entry into a new contract for tax purposes; an already perilous situation, further complicated by differences between intra-group and third party contracts and their treatment in differing jurisdictions. Before amendment can begin, an enterprise-wide discovery and data-extraction exercise must be completed to collate existing fallbacks. In the case of some products, discovery will be hampered by contract data still locked in paper form spread across multiple physical locations. Once analysed and categorised as to necessary amendment, the effects must be assessed for all affected. Successful transition will require communication and co-ordination between a firm's legal, trading/treasury, operations, risk, IT, and accounting departments and at least the first three in each of their counterparties.

Micro-effects are very far from binary, depending on the exact fallbacks in each contract. Fallbacks typically prevision the temporary non-publication of LIBOR, only the most apocalyptic of lawyers foresaw its outright cessation. Outside of the unipolar ISDA-documented derivatives world; fallback triggers, options and

LIBOR definitions are inconsistent across institutions, product types and jurisdictions. Reliance on legacy fallback language will be highly specific to fact, contract and jurisdiction and possibly open to legal challenge as to enforceability. Amendments to fallbacks may be frustrated by a given contract's amendment provisions or by the sheer difficulty of obtaining consent from numerous or even unknown bondholders. Any amendment to such a material part of a contract will produce winners and losers, necessitating pricing negotiation, agreement and financial adjustment before formal amendment can take place. For certain tenors in certain currencies, RFR liquidity is likely to be insufficiently developed to create reliable pricing on which negotiation may be based. Such negotiations e.g. big bank with small corporate are loaded with information asymmetry and conflict of interest risk. Without careful client categorisation, clear communications and transparent conduct, litigation will loom.

Conclusion

As a representative rate, LIBOR's demise may be dated from the onset of its metastatic derivative-fuelled growth. The FCA's threatened end-2021 test is akin to ritually pin-pricking a corpse. There are gains to seen on the RFR horizon: the establishment of an inconvertible reference rate, the concentration of liquidity into a single pricing curve, more efficient allocation of risk via the removal of bank funding risk from unrelated products, and no doubt many more. To the individual market entity, these benefits are largely intangible and arguably irrelevant. The corollary to having no deadline is that there can be no deus ex machina delay. A scant 28 months from now, the final nail will be hammered in the coffin. Riven by uncertainty, riddled with complexity, the transition from LIBOR to RFR is the single largest, and likely most costly, challenge yet faced by the financial markets.

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