# **The Libor Transition**

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#### **Abstract**

LIBOR is a benchmark interest rate, where global banks borrow each other for short term loans ranging from overnight to 1 year. The LIBOR scandal has caused a lot of damage to the international derivative markets. According to the CFTC manipulation of interest rate is done to benefit Barclay's derivatives trading position. Several other banks are being investigated by the European Union, including Royal Bank of Scotland which also has extensive PFI interests. The UK government has also focused on amending the financial services bill to allow government regulations of LIBOR. Although the future of libor remains unclear, the review serves as the first step towards restoring public trust, and maintaining libor integrity. An alternate rate (ARR) OR Risk-free rate (RFR) should be introduced in place of Libor.

Regulators, supervisors, and industry leaders are speaking now with one voice, LIBOR must go. But, if the efforts to retire LIBOR ignore its strength and history the transition will be even riskier than it needs to be.

**Keywords:** Background, Libor Scandal, Private Finance Initiative (PFI), Alternate Rate, Transition Risks

# 1. Background

Philip – A German Jewish family who came to America and made good and evolution a new form of capitalism. Philip (Lehman Brothers) weathered a civil war and moved beyond the origins as merchants, they started to trade many commodities and began to underwrite growing business around the country. He says finance capitalism is the only commodity that truly matters is money.

LIBOR 1960 – Cash assets could be managed more cheaply and flexibly outside the regulatory framework of their home country.

1970 – Due to rise in oil prices, London was made a branch for investment. Dollar denomination offshore the Euro dollar, London money market, and British Bankers

Association (BBA) decided to publish a single set of numbers and the first Libor fixing was made in January 1986.

## 2. Introduction

LIBOR is an interest rate benchmark administered by Intercontinental Exchange Benchmark Administration (ICE).

It is the average interest rate at which major global banks borrow from one another. It is quoted for five currencies (the U.S. Dollar, the Euro, the British Pound, the Japanese Yen, and the Swiss Franc), and serves seven different maturity tenors (overnight/spot next, one week, one month, two months, three months, six months, and 12 months). This combination leads to 35 different LIBOR rates that are reported each day.

ICE asks a designated panel of major global banks at what rate they would be willing to lend to other banks. They then use the trimmed average of the responses to determine the rate each day.

LIBOR is used in an assortment of financial products around the world, not just interbank products like rate futures and options. Many personal financial products also make use of the LIBOR rates, such as individual mortgages or student loans.

## 3. LIBOR Scandal

## 3.1. How Does Libor Affect Global Borrowing?

Many banks worldwide use Libor as a base rate for setting interest rates on consumer and corporate loans. Indeed, hundreds of trillions of dollars in securities and loans are linked to Libor, including government and corporate debt, as well as auto, student, and home loans, including over half of the United States' flexible-rate mortgages. When Libor rises, rates and payments on loans often increase; likewise, they fall when Libor goes down. Libor is also used to "provide private-sector economists and central bankers with insights into market expectations of economic performance and interest rate developments," explains the IBA, the new Libor administrator

In 2012, it was revealed that several major banks had been manipulating the LIBOR rate. The investigation into the LIBOR scandal was led by financial regulators in the United States and the United Kingdom, and it involved the participation of key players such as Barclays, UBS, and Royal Bank of Scotland. LIBOR market rate for roughly 500 \$ trillion in the world.

Major banks have published in pink papers, Investigations for some years specially after the eruption of Global financial crisis 2008. The agencies include:

- US Commodity Future Trading Commission (CFTC)
- US Department of Justice (DOJ)
- Federal Trade Commission (FTC)
- US Securities and Exchange Commission (SEC)

The first victim of investigation was Barclay's with a fine 450\$million, the CFTC is backed by documentary evidences like emails exchange, Notes sent etc

Juicy references to offer of gifts, high-cost champagne bottles, and freebies

Libor was not fairly priced – The change was that the Libor rates were lower by 0.2 to 0.3% when compared with CD spreads or with the then FED rates.

The investigation found that the banks had been submitting false information about their borrowing costs in order to manipulate the LIBOR rate. This allowed the banks to profit from trades based on the artificially low or high LIBOR rates. The investigation also revealed that the banks had colluded with each other to manipulate the LIBOR rate.

# 4. PFI (Private Financing Initiatives)

PFI hospital bears the cost of Libor manipulation, Libor is mainly used for derivatives, which are also financial products and are widely used in PFI deals. The fraudulent manipulation by Barclays Capital of the interbank lending rate (Libor) has real consequences for cash strapped NHS hospitals facing merger and service closure as a result of private finance initiative (PFI) debt repayments.

NHS (National health services) hospital special administration is effectively bankrupt, because trust income is falling but the PFI costs are rising partly because of reliance on derivative arrangements of the type marketed by Barclay's capital.

According to CFTC manipulation of interest rates is done to benefit Barclay's derivatives trading positions. Several other banks are being investigated by the European Union including Royal Bank of Scotland, which also has extensive PFI interests.

Interest rate swaps allow the PFI company to fix interest rates that would otherwise fluctuate in the money market, locking the public sector into high interest rates when the cost of government borrowing is low.

In Bromley, and many other NHS, PFI schemes the whole PFI debt repayment rises annually with the retail price index or the multiple of it.

# 5. Alternate Reference Rate (ARR)

In July 2017, the chief executive of the Authority, Andrew Bailey, gave a speech on the future of Libor and said that the Authority in consultation with market participants and especially the contributing banks would require Libor contributions only through 2021, after which they would be voluntary. The speech strongly urged the industry to move to more sustainable and suitable benchmarks.

Moreover, continuing to do so might expose those banks to future litigations given Libor's history. Bailey reiterated this message in July 2018.

A number of alternative benchmarks have been proposed including:

### • SOFR – Secured Overnight financing Rate:

The Secured Overnight Financing Rate (SOFR) is a broad measure of the cost of borrowing cash overnight collateralized by Treasury securities.

### • How does SOFR work?

SOFR sets the rate at which banks can borrow cash from individuals or other banks overnight, on the premise that the borrower will pay the lender back the following day, along with the added interest from SOFR. The rate is collateralized by the US treasury securities market – these are bonds issued by the US government. A bank will pledge treasuries as collateral to secure cash loans overnight, and as they are backed by the US government, they are usually seen as a good source of credit. They are therefore seen as a form of deposit insurance, which protects the lender's cash from loss.

### • SONIA – Sterling Overnight Interbank average rate:

(SONIA) is an unsecured overnight rate for wholesale funds for all sterling-denominated unsecured overnight funding deals in the British sterling market unsecured overnight rate for wholesale funds for all sterling denominated unsecured overnight funding deals in the British sterling market.

#### How does SONIA work?

SONIA works using a strict process that is monitored by the BoE and International Organisation of Securities Commissions (IOSCO) best practices.

First, they gather data from banks across the UK on the transactions that were completed on the previous trading day. So, if you'd been looking at the SONIA rate on a Friday, what you would actually be seeing is the transaction data from Thursday.

Next, the BoE runs the data through its algorithm to ensure that there are no unusual patterns interfering with the quality of the data. Once this is done, the SONIA rate is calculated by taking a weighted average of all unsecured overnight sterling transactions of a minimum size of £25 million. The top 25% and bottom 25% are removed, and the mean of the central 50% is presented and rounded to four decimal places.

At 9 am, the SONIA rate is sent to the BoE's licensees and users can then access the data from Bloomberg or Reuters.

### • SARON – Swiss Average Rate Overnight:

SARON represents the overnight interest rate of the Swiss secured money market. SARON is calculated on the basis of binding quotes and volume-weighted market transactions. According to SIX, the markets on which SARON is based are liquid, highly regulated, and of high integrity.

## 6. LIBOR Transition Risks

Libor transition has both advantages and disadvantages. Advantages:

- Reduce basic risk: As funding shifts to secured wholesale funding, RFR will reduce basic risk between assets and liabilities.
- Reduce manipulation by incorporating realized transactions
- Align with regulators The new RFR complies with European Union benchmark regulation.

### Disadvantages:

- Increased source of basic risk: Basic risk due to variation among Risk free rates (RFR)
- Which is between the secured RFR and unsecured RFR and other funding instruments
- Risk management challenges
- Technical issue: The new RFRs are overnight indices and currently have no term structure thus, legal fallbacks must be agreed upon. Credit risk implications vary based on whether the transactions underlying the rate are secured or unsecured.
- Liquidity: Liquidity in the new RFR based products is essential for wider market participants to adopt the alternate rates as a replacement for LIBOR.
- Valuation and risk management models: Changes to risk models, valuation tools/ systems, product design, existing hedging strategies, and forecast transactions will be required as the transition to alternative reference rates will impact a firms' market risk characteristics.
- Clear time and lagging regulation: A clear time has not been defined for transition
  across the industry or across regions. Mismatched transitions add the risk of unnecessary losses to counterparties. Additionally, regulators need to inform stakeholders
  about the changes in regulation that could follow from the decommissioning of LIBOR.
- Infrastructure: Modification of existing controls and processes will be necessary to
  account for transition-related impacts. A broad range of impacted systems, especially
  trade data repositories, core retail, and commercial banking systems, may need to be
  upgraded.
- Legal aspect operational and conduct risk: The transition introduces conduct risks as
  the benchmarks and spreads applied will be changed. Large scale changes in legal documentation, models, and curves introduce significant operational risk. Amendments
  to contracts require significant up-front transition costs.
- Impacted products: All existing and new contracts for derivatives, loans, bonds, and
  mortgages that refer to LIBOR will be impacted. Fallback language for amending the
  contracts must be agreed upon.
- Tax: Both direct and indirect taxes may be affected by a change in the fair value of contracts. Regulatory tax structures might be subject to changes. Tax payments on gains may require immediate recognition as contract renegotiation or closeout occur.
- Hedge accounting: As the fair value of contracts change, hedge accounting will need
  to be re-looked at, as previous hedges may not cancel out anymore in the new regime
  of RFRs.

# 7. Research Methodology

The paper is a complete literature review, 40 papers from various sources are collected of which 25 papers relevant to the topic are considered.

### 7.1. Results

IMF - "Global financial stability report 2008" observed that

- Libor and Euribor fixings beyond a week or month's maturity may not represent actual
  transactions but rely instead on banks assessment of their notional ability to borrow at
  those rates.
- All member banks of the British Bankers Association (BBA) were deeply involved in the derivatives market and had more to gain from it from the banking end.
- They had every incentive to hang around a rate. They low ball the rate.
- Libor has suffered some kind of inefficient behavior during the period 2006–12. In 2013 the levels of informational efficiency recovered to levels similar to periods previous to the financial crisis.
- Private Finance Initiative (PFI) fixes interest rates i.e., the interest rates are high when the government borrowing is low. Rise in retail index due to PFI debt repayment.
- LIBOR replacement by SOFR IT is essential most financial contracts reference SOFR itself as soon as possible, in order to develop a forward looking SOFR term rate and in turn facilitate a smooth transition.
- Since 2020 NYFED is publishing SOFR Average and they have been very reliable and transparent. Those who are using SOFR should not wait for forward looking rates in order to transition away from LIBOR.
  - About 60% of banks' existing business on the asset side was related to benchmark rate transition. About 40% of the banks see internal operational changes as a challenge. Banks have made progress in terms of debt securities on liability as only 10% consider this as ongoing risk. About 95% of the banks working on solution. More than 80% on internal operations.

Develop tools and procedures to accommodate new business with Bench marks Regulations (BMR). CAs are concerned about the legal challenges of transition.

### 7.2. Conclusion

LIBOR has its roots in an older, clubbier mode of capitalism, it took the twin shocks of the 2008 collapse and the revelation of LIBOR abuses, to sentence LIBOR to eventual extinction.

Regulators supervisors and industry leaders are speaking now with one voice Libor must go. But if the efforts to retire Libor ignore its strength and history the transition will be even riskier than it needs to be.

The UK Government will focus on amending the financial services bill to all government regulation of Libor. Although future Libor remains unclear, the Review serves as the first step towards restoring public trust and maintaining Libor integrity.

Loan indexed to Libor can offer insurance to lenders against adverse funding shocks. Indexing loans to a rate that does not reference bank funding cost directly, such as SOFR does not have this property.

In an economy that uses SOFR for indexing loan rates, banks need to change the risk management practices with respect to loan exposures. Alternatively, Libor could continue to be used by banks for indexing loans in an economy that would use mostly SOFR and its benchmark rate for derivatives and other cash products.

## 7.3. Further Scope of LIBOR Transition

According to KPMG there is a critical need to use AI capabilities such as natural language processing and machine learning in parallel with flexible approaches that keep end users and customers at the forefront of the transition plan.

According to Delloitte the FCA consultation outlines its requirements that the Libor benchmark administrators for the 1,3- and 6-month General British pound (GBP) and Japanese yen (JPY) Libor settings publish these settings under a "synthetic methodology" based on risk free rates for all of 2022.

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