ACUITY
KNOWLEDGE PARTNERS

WHITEPAPER

Transition to SOFR

impacts pricing mechanism of fixed income securities

acuitykp.com

With the recent amendments relating to financial regulators terminating use of the London Interbank Offer Rate (LIBOR), borrower concern about financial stability has increased. The shift to a new benchmark rate [the Secured Overnight Financing Rate (SOFR)], which would require constant monitoring and impose the additional burden of documentation, comes amid banks raising interest rates to the highest levels in the past 22 years and high inflation. The pace of transition to the new rate is surprisingly rapid, as LIBOR is higher than its counterpart and the borrower has room to save borrowing costs although central banks are on a tightening cycle. The benchmark replacement will be specified as "Term SOFR + Adjustment", according to the Alternative Reference Rates Committee's (ARRC's) new guidelines. This means the adjustment addresses the gap between SOFR and LIBOR with the following adjusted spreads:

1-month term SOFR
11.448 basis points

3-month term SOFR
26.161 basis points

6-month term SOFR
42.826 basis points

It has recently been claimed that SOFR tracks overnight transactions in the Treasury repurchase market; this is a preferred metric for estimating borrowing cost.

LIBOR has been in existence for the past 36 years, and moving away from such a benchmark would be a challenge for stakeholders. Although its replacement has been in the works for a decade, the transition after the official announcement by regulators has been a hindrance for market participants and banks. We have yet to see collaboration among rating agencies, lenders, investors and regulators to ensure a smooth transition that would preserve borrower confidence.

Background

In 2017, the ARRC identified SOFR as an alternative to LIBOR, which is based on actual transactions in the US Treasury repurchase (repo) market. This was in an effort to make available a secured overnight borrowing rate that reflects a broader range of market participants and transactions. Its inherent robustness makes it less prone to manipulation. The transition was not limited to the US. Markets across the globe also explored alternative refinancing metrics. For example, the Sterling Overnight Index Average, popularly known as "SONIA", is the preferred benchmark in the UK.

The USD LIBOR benchmark rates, the British pound (GBP), Japanese yen (JPY), Swiss franc (CHF) and euro (EUR), and the one-week and two-month USD LIBOR ceased to exist in January 2022. The discontinuation of these rates is part of the final cessation of LIBOR; the remaining USD LIBOR rates were discontinued on 30 June 2023.

On a global level, 2021 was considered to be the beginning of the end of LIBOR as a benchmark. In October 2021, federal financial regulators agreed that supervised institutions with LIBOR exposure would transition away from the benchmark. To this end, the agencies advised the institutions to not use LIBOR as a reference rate on fresh contracts after 31 December 2021 and ensure existing contracts have strong and sufficient fallback language clearly defining the alternative reference rate.

LIBOR was retired on 30 June 2023. It is critical that market participants and businesses comprehend how markets, regulators and companies may be affected by this and the different transition deadlines.

Post-transition challenges and market preparedness

Unlike LIBOR, which enables unsecured lending between banks, SOFR comes with secured overnight lending backed by collateral. The transition requires adjustments to account for differences in risk and tenor of the asset class. LIBOR-based contracts require renegotiation or replacement with SOFR-based alternative metrics; this entails market participants' time and effort.

Products transitioned based on SOFR include the following:

1. **SOFR futures and swaps:** Derivatives that permit market participants to manage their interest rate risks based on SOFR.
2. **SOFR-linked floating-rate notes (FRNs):** Debt securities that have coupon linked to SOFR, making available an alternative to the traditional LIBOR-linked notes.
3. **SOFR-indexed loans:** Loans with interest rates linked to SOFR, an alternative to LIBOR- based loans.
4. **SOFR-linked mortgages:** Mortgage lenders have started offering mortgages with interest rates linked to SOFR.
5. **SOFR-linked deposits:** Banks and financial institutions may offer deposits with rates based on SOFR referencing.

6. **SOFR-linked swaptions:** Options on interest rate swaps (swaptions) have been introduced with underlying SOFR-based swaps.
7. **SOFR-linked structured products:** Products such as certificates of deposit (CDs) have been structured using SOFR as a benchmark.

Nature of rate: One of the main obstacles faced by the markets is the fundamental difference between LIBOR and SOFR. LIBOR is a forward-looking rate while SOFR is an overnight benchmark. The difference requires market participants to adapt their pricing methodologies to accommodate the new rate mechanism.

Liquidity: Another significant challenge is the need for liquidity in the SOFR market. While the new rate has seen significant growth, it still lags behind LIBOR in terms of breadth and depth. Market stability would be maintained only when liquidity for SOFR-based products is enhanced.

Market preparation: Bankers, asset managers and corporates have been busy preparing for the transition. Many businesses in the financial markets sector have worked round the clock to ensure their traditional models and "business as usual" operations are ready for the shift. The process mainly involves documentation, renegotiating contracts and implementing new technology and infrastructure.

The 30 June 2023 deadline was met with no major issues except in the loan markets. Approximately USD100bn worth of transactions, accounting for nearly 8% of the market, lacked fallback language and used synthetic LIBOR. Fallback language is basically term-adjusted SOFR plus a spread adjustment. It is used to calculate contract payments that will be set at the end of the payment period on the fallback observation day, no less than two business days prior to the payment date. Synthetic LIBOR is an alternative approach to determining LIBOR after it is discontinued. It aims mainly to ensure continuity and prevent market disruption. Although it may appear that LIBOR is not completely done away with, as synthetic LIBOR will continue to be used until September 2024, it is important to note that the rate is non-representative.

Transition influences pricing mechanism for bonds

The cessation of LIBOR in June 2023 has obstructed bankers' deal pricing for clients. This is because replacing the LIBOR term rate with the daily SOFR rate, which is paid in arrears, is not a solution for calculating the coupon on bonds. This is due to the cash flow and timing of payments at the end of the rate accumulation period. Since the new benchmark is quoted daily, there is a possibility that rates may not be published on the day of the principal or interest payment. It is even less likely that the coupon can be calculated and the payment can be prepared on time.

According to the 2019 ARRC recommendation, SOFR floating-rate notes should be estimated using a compounding formula based on rates published daily. These notes should be settled in arrears, without a delay in payments. There should also be a two- to five-day buffer or lookback period with or without an observation shift. A lookback period provides the counterparties with additional notice by applying a SOFR from a fixed number of business days prior to the given interest-payment date. This methodology is somewhat cumbersome, and many market participants still prefer to adopt a forward-looking approach when calculating SOFR coupons.

Another method commonly used where bonds are concerned is "SOFR in advance". Here, the coupon is computed at the beginning of the period, based on the average SOFR rate ranging over 30, 60 or 90 days, as quoted on the Federal Reserve's (Fed's) website two days prior to the start of the accrual period. Note that incorporating such rates requires significant convexity adjustments, particularly for longer tenors. The modifications are required to account for the differences between forward-looking SOFR rates and fixed coupon rates aligned to the bonds.

Traditional models have been impacted, as changes in benchmark require constant monitoring before estimating re-offer yields and swaps across hard currencies. For instance, bankers across the globe adopted the "USD Semi Annual 30/360 (vs 3m LIBOR) rate", a vanilla interest rate swap agreement between two counterparties to exchange cash flow (fixed vs floating) in the same currency. This agreement is often used by counterparties to change their fixed cash flow to floating or vice versa. Payments are made during the lifespan of the swap in the frequency pre-determined by the counterparties. Bankers used this as a benchmark rate to determine the mid-swap rate, compared to the current Treasury yield, to compute the swap spread. After the USD Semi Annual 30/360 (vs 3m Libor) rate was ceased on 30 June 2023, market participants replaced this benchmark with the "USD SOFR Swap OIS", to execute the abovementioned spread estimation. This is an overnight indexed swap rate; it is a fixed/floating interest rate swap where the floating leg is computed using a published overnight index rate. The index rate is typically the rate for overnight lending.

Impact on international floating-rate bond markets

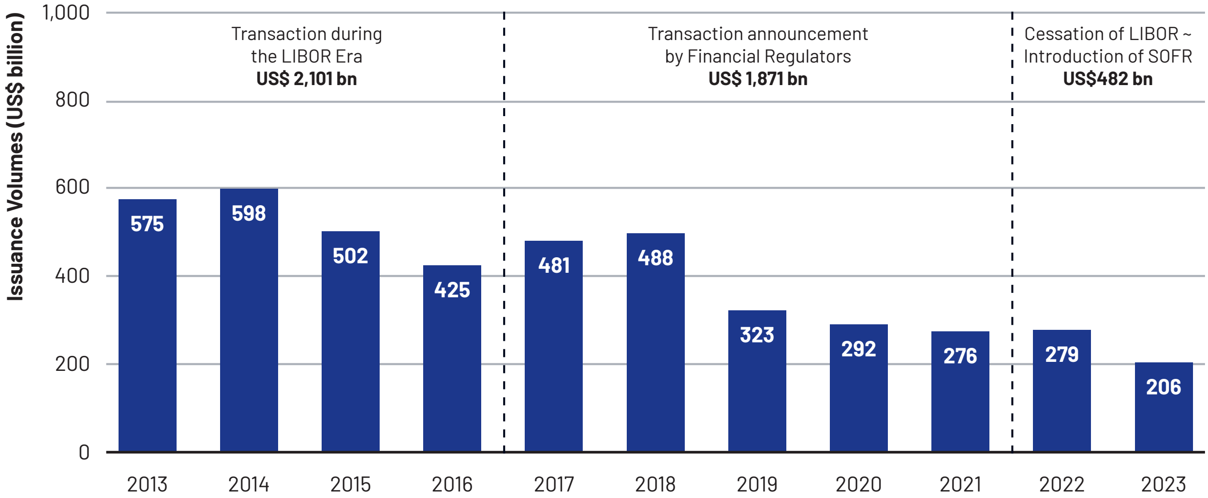
Bond investors are now exploring how to navigate a prolonged period of higher interest rates expected to weigh on the US economy after the Fed left open the possibility of more rate hikes, eliminating the likelihood of easing financial conditions in the near term. With the latest 25bps hike, the Fed has raised the terminal rate by 525bps since March 2022, to a level seen before the 2007 housing crisis, to curb persistently high inflation.

Fixed income investors remain concerned about how long central banks can keep rates at restrictive levels without causing an economic downturn. Timing a shift in benchmark rates is, therefore, critical, as a weaker economy would cause the central banks to cut rates.

Yields at the longer end of the curve are near their highest levels since 2007 as investors speculate the Fed will avoid recession while meeting its ultimate goal of curbing inflation. Other developed economies such as the UK and Europe have also seen a sell-off in bonds; UK 10-year gilts reached their highest levels since 2008, and Germany's benchmark reached levels not seen since 2011.

Amid the current interest rate regime and the transition from LIBOR to SOFR, international floating-rate bond markets have seen significant downward pressures in issuance volumes, with issuers adapting to tapping the markets or recalibrating their models to ensure suitable pricing levels (Figure 1).

Figure 1: International USD, EUR, GBP, JPY & CHF denominated Floating Rate Bonds



Source: Bloomberg

Benchmark floating rate	2014
Euribor	59.4%
Libor USD	32.0%
Libor GBP BBA fixing	6.7%
Libor JPY BBA fixing	0.6%
Others	0.6%
Libor CHF BBA fixing	0.4%
Term SOFR (TSFR)	0.1%
SOFR secured O/N financing rate	0.1%
SOFR index	0.0%
SONIA O/N deposit rate – swaps	0.0%

Benchmark floating rate	2018
Euribor	45.4%
Libor USD	41.7%
Libor GBP BBA fixing	4.4%
SONIA O/N deposit rate – swaps	3.9%
Term SOFR (TSFR)	2.4%
SOFR secured O/N financing rate	1.6%
Others	0.3%
Libor JPY BBA fixing	0.3%
SOFR index	0.0%
Libor CHF BBA fixing	0.0%

Benchmark floating rate	2023
Euribor	39.4%
SOFR secured O/N financing rate	35.5%
SOFR index	11.3%
SONIA O/N deposit rate – swaps	8.9%
Others	3.8%
Term SOFR (TSFR)	1.0%
Libor USD	0.0%
Libor GBP BBA fixing	0.0%
Libor JPY BBA fixing	0.0%
Libor CHF BBA fixing	0.0%

Source: Bloomberg

Transition not favouring issuers

The transition from LIBOR to SOFR requires issuers to modify issuances priced in the past. Aegon, a digital life insurance company in India offering a wide range of life insurance policies, priced USD500m worth of perpetual floating-rate notes in July 2004, callable in 2023. After SOFR was introduced, the company decided to undertake a liability-management exercise involving consent solicitation, which would help it modify the terms and conditions of the securities. The terms featured a coupon rate that was calculated using the LIBOR swap rate, which was discontinued on 30 June 2023.

The ARRC had issued a recommendation for substituting SOFR with referencing swap rates. Aegon proposed a simple variation to the committee that comprised two parts:

1. Substitution of references to "USD CMS 10-year" [the 10-year USD LIBOR Ice Swap Rate (ISR)] in the interest provisions of the securities with "10-year SOFR ISR" and a fixed spread adjustment to compensate holders for certain differentials between the two swap rates.
2. The updated fallback provisions to be also included to cater to a future discontinuation of the SOFR ISR.

Why did Aegon opt for consent solicitation?

The perpetual securities issued by Aegon in 2004 feature a quarterly floating-rate coupon equal to the 10-year USD LIBOR ISR + 0.1%, subject to an 8.5% maximum. This LIBOR-referencing swap rate was discontinued by 30 June 2023 and is no longer published by administrators. The terms of the securities did not provide for any fallback that could be used to determine the floating-rate coupon after cessation. To avoid a situation where no interest rate could be determined and no coupon payment could be made to the bondholders, Aegon decided to conduct a consent solicitation exercise to amend the floating-rate coupon calculation. A consent solicitation is a liability-management exercise where a security issuer proposes changes to the terms of the security agreement to safeguard investor interest and abide by regulations and corporate changes a company's board wishes to enact outside of the company annual meeting.

Details of the consent solicitation

The proposed modifications to the perpetual securities were limited to interest rate provisions in the terms of the initial offer and were aimed at redressing the embedded LIBOR coupon and introducing updated fallback provisions. The ARRC has published recommendations in relation to substituting LIBOR-referencing swap rates. It advocates calculating the replacement rate by applying a sophisticated formula based on SOFR-referencing swap rates with technical adjustments to mark the differences in payment frequency and day-count conventions, with a variable spread adjustment.

Aegon proposed the application of a simplified methodology by adopting the ARRC formula, which would result in a fixed spread adjustment over a variable spread adjustment per quarter. This approach derived the spread adjustment for moving from a 10-year LIBOR swap rate to a 10-year SOFR swap rate as of 31 March 2023.

Aegon considered the abovementioned approach as appropriate to achieve a neutral outcome considering factors such as general industry and market feedback for the active transition of USD LIBOR-referencing securities. It considered exercising the call option available in the terms at the time of issuance and claimed it was economical for the company.

New floating-rate coupon and spread adjustment

Based on the 10-year SOFR-referencing swap rate of 3.242% on 31 March 2023, the proposed spread adjustment is 0.28753%. Aegon believed that an approach that provides a beneficial outcome for the holders must be adopted, versus the specific formula prescribed by the committee. The ARRC approach would result in a variable spread, depending on the 10-year SOFR-referencing swap rate, with a maximum adjustment of 0.28767% for a swap rate of 3.01%.

The simplified approach to calculating the spread fixes the spread adjustment close to the maximum spread under the committee's approach. In the event eligible holders consent to the proposed changes, the securities would have a quarterly floating-rate interest equivalent to the 10-year SOFR ISR plus 0.38753% (the sum of the original credit spread and the spread adjustment), subject to an 8.50% maximum.

The way ahead

The transition from LIBOR to SOFR would require the markets to be prepared to meet the challenges. The pain points for market participants would relate mainly to adapting pricing and risk estimation models, addressing liquidity concerns as a new benchmark comes into play, dealing with complexities in calculating and estimating future cash flow with respect to floating-rate notes and new structured products. The banking sector is exploring how structured products could be used to mitigate risk between interest rate swaps referencing the US SOFR and term SOFR piling up on dealers' balance sheets. The transition could encounter regulatory roadblocks, and overseeing the transition away from LIBOR, which was the benchmark for more than 36 years, may create conflict with guidelines on the use of forward-looking rates. To ensure they meet regulatory norms, market participants need to efficiently analyse rate estimations, demarcate risk and return, be thoroughly familiar with regulatory information and documentation processes and protect investor interest at all times, as the transition may be dynamic and result in volatility in pricing mechanisms.

Details are expected over the coming quarters; these would provide greater clarity for borrowers in terms of being prepared for the transition. The first would relate to the ISDA's amended fallback definitions for legacy and new trades. Markets may experience hiccups in SOFR-based activity amid the transition. Lenders would continue to focus on curbing their borrowing costs while keeping in mind the stance of central banks in the current interest rate regime.

How Acuity Knowledge Partners can help

We are a leading provider of high-value research, analytics and business intelligence to the financial services sector. We support over 440 financial institutions and consulting companies through our specialist workforce of over 4,250 analysts and delivery experts across our global delivery network. We provide bespoke support to the debt capital market (DCM) teams of investment banks and advisory firms across the world through a wide range of solutions for corporate DCM, financial institutions group (FIG) DCM, sovereign, supranational and agencies (SSA) DCM, sustainable DCM and HY teams. We also provide assistance with pricing mechanisms for debt securities and estimations across different types of debt products such as fixed-rate, floating-rate and cross-currency/reverse cross-currency swaps. Our team of experts regularly tracks macroeconomic factors affecting markets and provides end-to-end support, from deal origination to execution, including the most intricate financial analysis and aftermarket support. The DCM team also provides assistance with covenant analysis on different types of debt products by actively monitoring and capturing the covenants being incorporated by issuers in the offering circular, interpreting the ultimate purpose of the investments and how far they will benefit investors, and helping issuers raise funds.

AUTHOR

Sridhar Shivaram
Senior Associate

Sridhar has been working with Acuity's Global Capital Markets (GCM) team for over 4 years. He is currently supporting the GCM team of a major European investment bank and has demonstrated his proficiency in comprehending the Investment Grade and High Yield bond markets across the United States, Asia and EMEA. He has also developed expertise in providing assistance to global investment banks in deal execution and pricing. Prior to joining Acuity, Sridhar was working with an Indian mid-size investment bank where he was responsible for providing assistance to Investment Advisory and DCM Origination and Sales teams in their fund raising initiatives. Sridhar holds a Post Graduate Diploma in Management, specializing in Finance from New Delhi Institute of Management. He is also passionate about the equity markets, financial planning and private wealth management.

Sources:

https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/arrc-supplemental-hardwired-recommendation

https://www.newyorkfed.org/arrc/sofr-transition#pacedtransition

https://www.risk.net/insight/markets/7957455/beyond-libor-the-impact-of-sofr-on-rates-bonds-and-loans

https://www.aegon.com/newsroom/news/press-releases/2023/consent-solicitation

About Acuity Knowledge Partners

Acuity Knowledge Partners (Acuity) is a leading provider of bespoke research, analytics and technology solutions to the financial services sector, including asset managers, corporate and investment banks, private equity and venture capital firms, hedge funds and consulting firms. Its global network of over 6,000 analysts and industry experts, combined with proprietary technology, supports more than 500 financial institutions and consulting companies to operate more efficiently and unlock their human capital, driving revenue higher and transforming operations. Acuity is headquartered in London and operates from 10 locations worldwide.

Acuity was established as a separate business from Moody's Corporation in 2019, following its acquisition by Equistone Partners Europe (Equistone). In January 2023, funds advised by global private equity firm Permira acquired a majority stake in the business from Equistone, which remains invested as a minority shareholder.

Our expertise includes the following:

- Investment Banking: origination and trading support
- Investment Research support: covering all asset classes in terms of ideation, data science, and research support across the buy side and sell side
- Commercial Lending support: across origination, credit assessment, underwriting, and covenant and portfolio risk for all lending types
- Private Equity: origination, valuation and portfolio monitoring support
- Asset Management services support: across marketing, investment research, portfolio management/ optimisation, risk and compliance
- Corporate and Consulting services: market and strategic research; survey work; treasury and counterparty risk support; and CEO office support, including M&A, FP&A and investor relations support
- Compliance support: AML analytics, KYC, counterparty credit risk modelling and servicing across banks, asset managers and corporates
- Data Science: web scraping, data structuring, analytics and visualisation These services are supported by our proprietary suite of Business Excellence and Automation Tools (BEAT) that offer domain-specific contextual technology.

These services are supported by our proprietary suite of Business Excellence and Automation Tools (BEAT) that offer domain-specific contextual technology.

Contact us

London
1 Poultry, London
EC2R 8EJ

New York
16 E 34th St
New York, NY 10016

California
400 Concar Dr
San Mateo, CA 94402

Florida
Brickell City Centre 78 SW 7th St
Miami, FL 33130

acuitykp.com contact@acuitykp.com acuity-knowledge-partners AcuityKP

ACUITY KNOWLEDGE PARTNERS