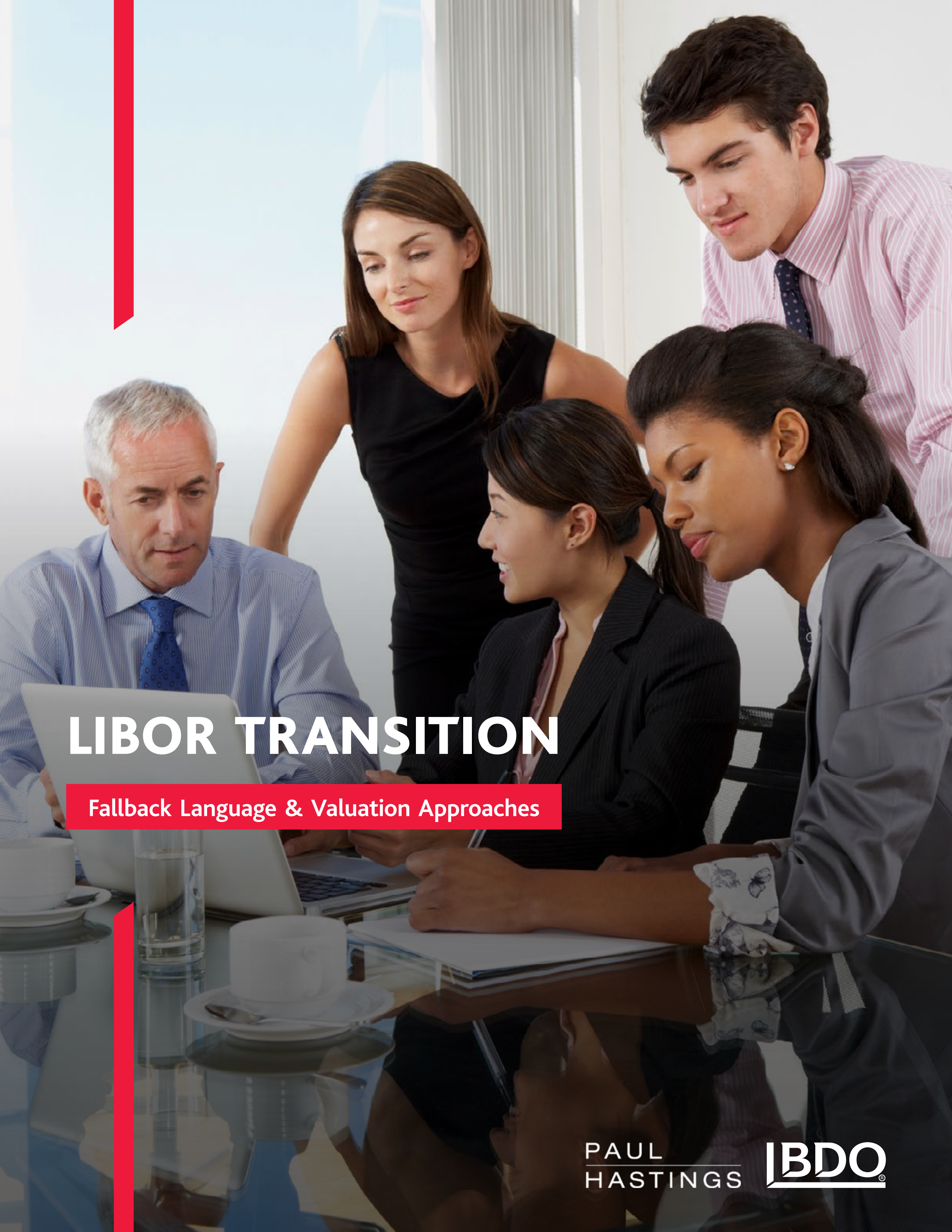


# LIBOR TRANSITION

## Fallback Language & Valuation Approaches

As with any major transition initiative, unforeseen and unaccounted for surprises are typically encountered along the way. Undergoing a London Interbank Offered Rate (LIBOR) transition from beginning to end is no different.  In order to facilitate a smooth transition for cash products and derivatives, regulators have been enacting a phased-out approach to LIBOR cessation. Although the actual time of discontinuation is still in flux, the risk assessment, valuation methods and legal analysis will all be required.

This article presents a detailed view of the various cash and derivatives instrument types and the applicable industry-recommended contractual fallback language as well as the valuation approaches contemplated for each in connection with USD LIBOR transition. It also includes the best practice recommendations that the Alternative Reference Rates Committee (ARRC) published for each product to guide market participants, which ARRC recently confirmed to be fully consistent with the timelines and message set out in the November 2020 U.S. supervisory guidance and the ICE Benchmark Administration (IBA) and the UK Financial Conduct Authority (FCA) announcements.

# CASH PRODUCTS

## 1. SYNDICATED LOANS

A syndicated loan is a type of fixed income instrument where debt financing is offered by a group of financial lenders that provides funding to a borrower. This type of loan financing often has floating interest rates based on a benchmark rate such as LIBOR. As such, in light of the imminent end of the LIBOR after its five-decade prominence as the primary benchmark rate, many companies have started allocating resources to focus on transition readiness programs.

- **ARRC Fallback Contract Language:**
  In June 2020, ARRC released updated contract fallback language recommendations based on the **"hardwired approach"** with the goal of providing certainty for the successor rate and avoiding the need to seek consent for amendments. If one or more of the trigger events have occurred, then the syndicated loan will reference the benchmark replacement (including the applicable spread adjustment).

### Trigger Events:

1. **Pre-cessation:** A public statement or publication of information by the supervisor for the benchmark administrator (e.g., FCA in the case of LIBOR) that all available tenors of such benchmark are no longer representative.
2. **Permanent Cessation:** A public statement or publication of information that the actual cessation of LIBOR has occurred or is expected by the administrator of LIBOR (IBA), regulatory body of the administrator or court with jurisdiction over such administrator.
3. **Early Opt-in:** Election by the administrative agent and borrower in advance/prior to the above triggering events, i.e. even while LIBOR is still available, subject to negative consent by required lenders.

### Benchmark Replacement Waterfall:

1. Term SOFR + Spread Adjustment
2. Daily Simple SOFR + Spread Adjustment
3. Borrower and Administrative Agent Selected Rate + Spread Adjustment

### Spread Adjustment Waterfall:

Determines any spread adjustment to account for differences between the legacy rate and the replacement rate intended to facilitate a "Value-for-Value" rate exchange.

1. ARRC Selected Adjustment: Using a 5-year median spread adjustment methodology and matching the value of ISDA's spread adjustment
2. ISDA Fallback Adjustment
3. Borrower and Administrative Agent Selected Adjustment

- ARRC Recommended Target for Incorporating Hardwired Fallbacks: **September 30, 2020**
- ARRC Recommended Target for Cessation of New Use of USD LIBOR: **June 30, 2021**

### Valuation Approach:

The valuation of fixed income instruments typically entails the use of an income approach where the present value of expected future principal and interest payments is calculated through a discounting mechanism that captures time value and the credit risk profile of the underlying borrower. Depending on the specific features and embedded options associated with the subject fixed income instruments, the valuation framework can vary from a simple discounted cash flow approach to more sophisticated stochastic interest rate or default models.

LIBOR transition presents unique challenges regarding valuation of debt instruments, due to the fundamental differences between LIBOR and SOFR (or other alternative replacement rates (ARRs) that will be used as a replacement for LIBOR).

Although the overall debt valuation methodology does not change with the LIBOR to SOFR transition, there are elements regarding the development of certain key assumptions due to the fundamental differences between LIBOR and SOFR (or other ARRs) that will be used as a replacement for LIBOR. The following key differences between LIBOR and SOFR are the most impactful to market practitioners from a valuation perspective.

1. **Term Structure:** One of the most prominent issues facing SOFR adoption is the lack of a reliable term structure that allows market practitioners to attain forward-looking insights on market expectations of future interest rates. This challenge is partially mitigated through the development of SOFR future and swap markets since May 2018. While these SOFR-based derivatives have not yet gained the same level of depth and liquidity as their LIBOR counterparts, ARRC has repeatedly pointed to the importance of promoting availability and reliability of a SOFR term structure over time. The availability of forward-looking SOFR term rates will greatly enhance the valuation process of floating rate instruments, as it will offer the visibility required for any market practitioner to model out expected future cash flows.
2. **Credit Risk:** Another issue facing the SOFR adoption process is the difference in the level of credit risk carried by LIBOR and SOFR. This has led to different expected rates of return required by market investors on the two underlying sets of reference rates. While this issue is expected to be at least partially mitigated by the recommended spread adjustment mechanism, any unexpected market movements near or at the time of the transition could result in failures to establish fair value equivalence.

The valuation approach for a SOFR-based syndicated loan is going to be predicated on existing valuation approaches as mentioned above, while sufficiently capturing adjustments needed in the cash flows and the discount rate associated with the valuation framework. In the following section, other cash products are introduced. While they possess a few unique differentiating features, they are typically valued using an income approach, similar to syndicated loans.

## 2. BILATERAL BUSINESS LOANS

A bilateral business loan represents an agreement between an individual borrower and only one lender, as opposed to syndicated loans that represent an agreement between a group of lenders.

- **ARRC Fallback Contract Language:**
  In August 2020, ARRC released updated recommended contract fallback language based on the **"hardwired approach"** or the **"hedged loan approach"**, with the goal of providing certainty for the successor rate and adjustments and avoiding the need to seek consent for amendments.

### "HARDWIRED APPROACH"

**Trigger Events:**

1. **Pre-cessation:** A public statement or publication of information by the supervisor for the benchmark administrator that all available tenors of such benchmark are no longer representative.
2. **Permanent Cessation:** A public statement or publication of information that the actual cessation of LIBOR has occurred or is expected by the administrator of LIBOR (IBA), regulatory body of the administrator or court with jurisdiction over such administrator.
3. **Early Opt-in:** Election by lender in advance/prior to the above triggering events, i.e. even while LIBOR is still available.

**Benchmark Replacement Waterfall:**

1. Term SOFR + Spread Adjustment
2. Daily Simple SOFR + Spread Adjustment
3. Lender Selected Rate + Spread Adjustment

**Spread Adjustment Waterfall:**

1. ARRC Selected Adjustment: Using a 5-year median spread adjustment methodology and matching the value of ISDA's spread adjustment
2. ISDA Fallback Adjustment
3. Lender Selected Adjustment

### "HEDGED LOAN APPROACH"

The "hedged loan approach" is intended for use if parties wish to have the fallback rates applicable to floating rate interest exposure under the cash product (e.g., a loan under the credit agreement) be aligned with the fallback rates applicable to the relevant swap documents such as an ISDA Master Agreement.

Using this approach, the fallbacks in the loan in relation to the Trigger Event, Benchmark Replacement and Spread Adjustment would all follow the applicable provision for derivatives transactions referencing the 2006 ISDA Definitions.

- ARRC Recommended Target for Incorporating Hardwired Fallbacks: **October 31, 2020**
- ARRC Recommended Target for Cessation of New Use of USD LIBOR: **June 30, 2021**
- **Valuation Approach:**
  The economic structure of a bilateral business loan is similar to that of a syndicated loan; therefore, similar valuation considerations are applicable for bilateral business loans.

## 3. SECURITIZATIONS

Structured products represent financial instruments that have undergone a securitization process with cash flows structured into various tranches of priority claims and backed by the underlying pool of assets.

- **ARRC Fallback Contract Language:**
  In May 2019, ARRC released recommended contract fallback language with the goal of providing certainty for the successor rate and adjustments and avoiding the need to seek consent for amendments.

### Trigger Events:

1. **Pre-cessation:** (i) A public statement or publication of information by the supervisor for the benchmark administrator that the benchmark is no longer representative or (ii) when the asset replacement percentage is greater than [50]% (at the election of the parties and to be tailored to the specifics of the particular securitization transaction).
2. **Permanent Cessation:** A public statement or publication of information that the actual cessation of LIBOR has occurred or is expected by the administrator of LIBOR (IBA), regulatory body of the administrator or court with jurisdiction over such administrator.

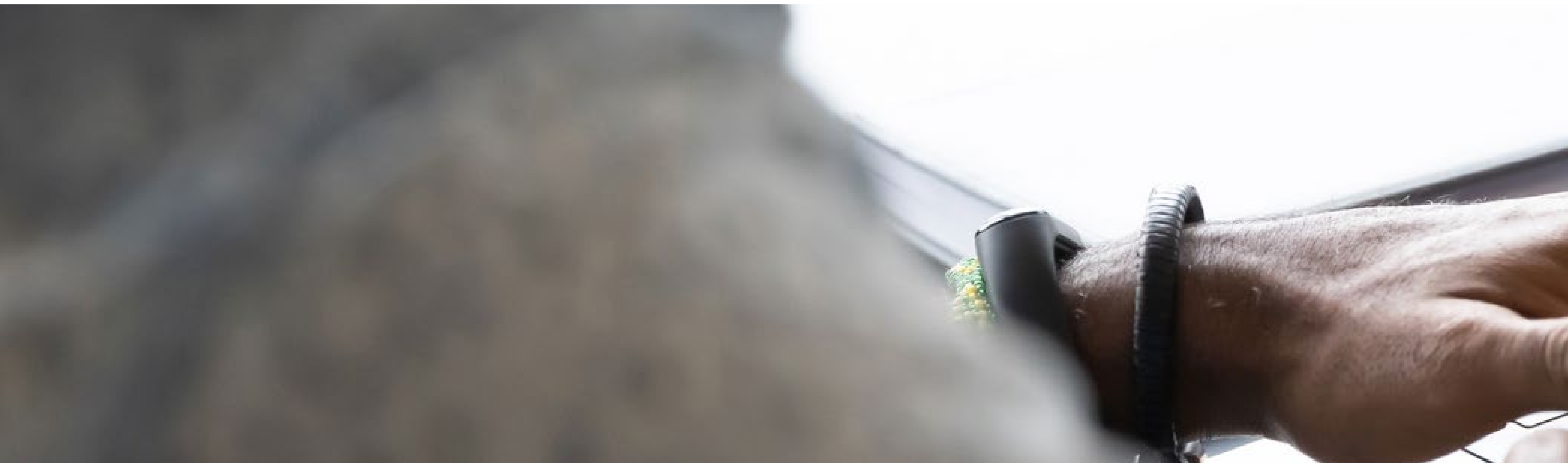
### Benchmark Replacement Waterfall:

1. Term SOFR + Spread Adjustment
2. Compounded SOFR or Simple Average SOFR + Spread Adjustment
3. Relevant Governmental Body Selected Rate + Spread Adjustment
4. ISDA Fallback Rate + Spread Adjustment
5. Transaction-Specific Fallback Rate + Spread Adjustment (optional)

### Spread Adjustment Waterfall:

1. ARRC Selected Adjustment: Using a 5-year median spread adjustment methodology and matching the value of ISDA's spread adjustment
2. ISDA Fallback Adjustment
3. Designated Transaction Representative Selected Adjustment

- ARRC Recommended Target for Incorporating Hardwired Fallbacks: **June 30, 2020**
- ARRC Recommended Target for Cessation of New Use of USD LIBOR: **September 30, 2021 for CLOs and June 30, 2021 for Others**
- **Valuation Approach:**
  Valuation techniques often vary depending on the specific type of underlying assets and the complexity of the securitization process. These approaches range from a simpler modified discounted cash flow method that takes into consideration expected prepayment and default rates, to more complex simulation-based default models.



## 4. FLOATING RATE NOTES

A floating-rate note (FRN) is a debt instrument with a variable interest rate, generally with a longer maturity term than that of a syndicated or bilateral business loan.

- **ARRC Fallback Contract Language:**
  In April 2019, ARRC released recommended contract fallback language with the goal of providing certainty for the successor rate and adjustments and avoiding the need to seek consent for amendments.

### Trigger Events:

1. **Pre-cessation:** A public statement or publication of information by the supervisor for the benchmark administrator that the benchmark is no longer representative.
2. **Permanent Cessation:** A public statement or publication of information that the actual cessation of LIBOR has occurred or is expected by the administrator of LIBOR (IBA), regulatory body of the administrator or a court with jurisdiction over such administrator.

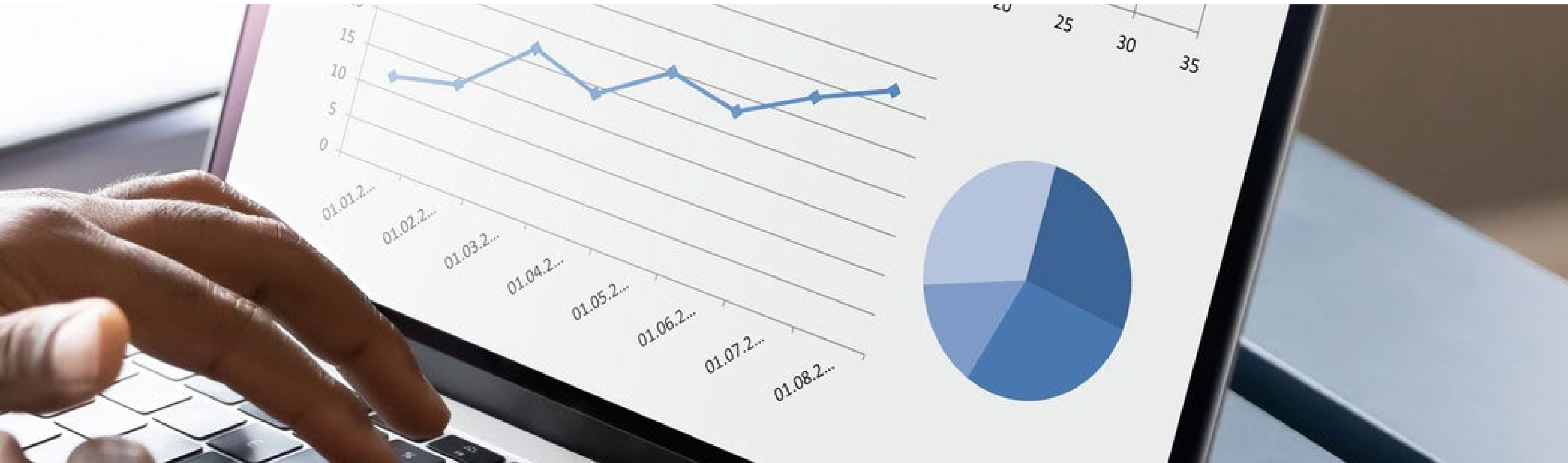
### Benchmark Replacement Waterfall:

1. Term SOFR + Spread Adjustment
2. Compounded SOFR or Simple Average SOFR + Spread Adjustment
3. Relevant Governmental Body Selected Rate + Spread Adjustment
4. ISDA Fallback Rate + Spread Adjustment
5. Issuer or its Designee Selected Rate + Spread Adjustment

### Spread Adjustment Waterfall:

1. ARRC Selected Adjustment: using a 5-year median spread adjustment methodology and matching the value of ISDA's spread adjustment
2. ISDA Fallback Adjustment
3. Issuer or its Designee Selected Adjustment

- ARRC Recommended Target for Incorporating Hardwired Fallbacks: **June 30, 2020**
- ARRC Recommended Target for Cessation of New Use of USD LIBOR: **December 31, 2021**
- **Valuation Approach:**
  The economic structure of an FRN is similar to that of a syndicated or bilateral loan. However, due to the longer maturity term associated with the floating rate notes, a valuation exercise will require a more rigorous assessment of the term structure of the SOFR for longer tenors.



## 5. ADJUSTABLE RATE MORTGAGES

An adjustable-rate mortgage (ARM) is a type of mortgage in which the interest rate applied on the outstanding balance varies throughout the life of the loan.

- **ARRC Fallback Contract Language:**
  In November 2019, ARRC released recommended contract fallback language with the goal of providing certainty for the successor rate and adjustments and avoiding the need to seek consent for amendments.

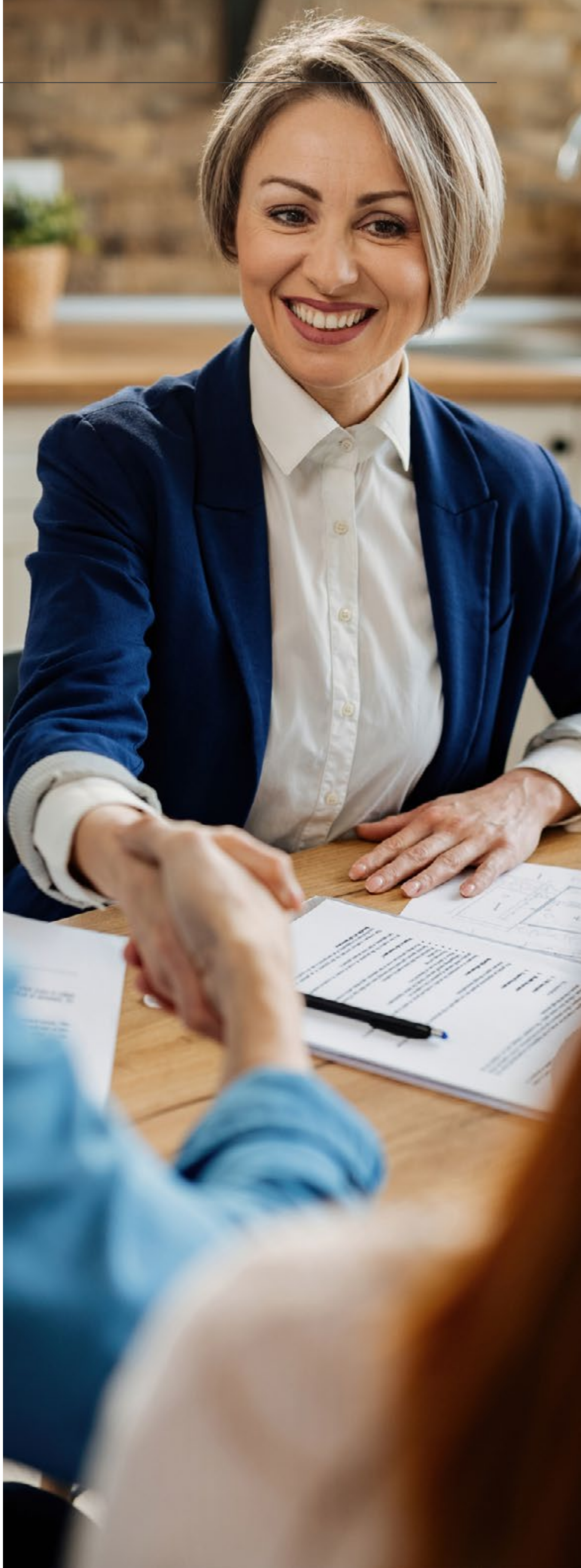
  **Trigger Events:**

  1. **Pre-cessation:** A public statement by the index administrator or its regulator that the index is no longer reliable or representative.
  2. **Permanent Cessation:** The index administrator has permanently or indefinitely stopped providing the index to the general public.

  **Benchmark Replacement Waterfall:**

  1. ARRC Selected Replacement Index + ARRC Recommended Spread Adjustment
  2. Note Holder Selected Replacement Index + Note Holder Selected Spread Adjustment

- ARRC Recommended Target for Incorporating Hardwired Fallbacks: **June 30, 2020**
- ARRC Recommended Target for Cessation of New Use of USD LIBOR: **September 30, 2020**
- **Valuation Approach:**
  Valuation models constructed for this type of instrument usually need to take into consideration the principal amortization schedules. As the underlying borrower and real estate property constitute the level of credit risk associated with the instrument, the discount rate will need to be estimated through a different analytical process than that of the syndicated/business loans and floating rate notes.



## DERIVATIVES

The discontinuation of LIBOR will impact various derivatives transactions, including interest rate derivatives that are financial instruments with a value that is linked to the movements of interest rates. These may include swaps, options, futures or other derivatives. Interest rate derivatives are often used as hedges to protect against changes in market interest rates, but they can also be used to increase or refine the holder's risk profile or to speculate on rate moves.

- **ISDA Fallback Contract Language:**
  In October 2020, ISDA released the IBOR Fallbacks Supplement to the 2006 ISDA Definitions and related protocol, which both became effective as of January 25, 2021 and can be incorporated into new and legacy LIBOR referencing derivatives.

### Trigger Events:

1. **Pre-cessation (for certain LIBORs):** A public statement or publication of information by the supervisor for the benchmark administrator announcing that (i) the supervisor has determined that such benchmark is or will no longer be representative of the underlying market and economic reality that such benchmark is intended to measure and that representativeness will not be restored and (ii) it is being made in the awareness that the statement will engage certain contractual triggers for fallbacks activated by pre-cession announcements by such supervisor in contracts.

2. **Permanent Cessation:** A public statement or publication of information that the actual cessation of LIBOR has occurred or is expected by the administrator, regulatory body of the administrator or a court with jurisdiction over such administrator of LIBOR.

### Benchmark Replacement:

- Compounded SOFR in arrears (for USD LIBOR) + Spread Adjustment

### Spread Adjustment:

- ISDA Fallback Adjustment: Using a 5-year median spread adjustment methodology

### Publication:

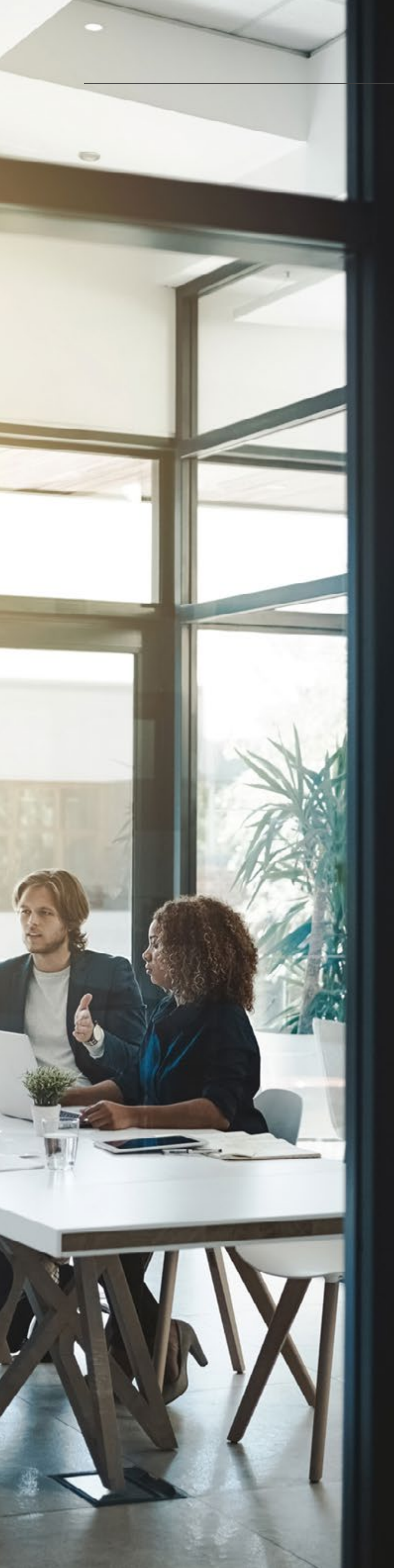
1. ISDA has engaged Bloomberg Index Services Limited (BISL) to calculate and publish the fallback rates.

2. BISL will publish, on a daily basis, the SOFR rate compounded in arrears over the relevant period, Spread Adjustment, and the "all-in" fallback rate for each tenor of USD LIBOR.

- ARRC Recommended Target for Incorporating Hardwired Fallbacks: **No later than 3-4 months after Amendments to ISDA 2006 Definitions are published.**
- ARRC Recommended Target for Cessation of New Use of USD LIBOR: **June 30, 2021.**

- **Valuation Approach:**
  The valuation of interest rate derivative instruments presents additional challenges compared to debt instruments.

  - Valuation by Product
    - **Interest Rate Swap / Future:** A DCF approach is typically used to value these instruments with the use of forward LIBOR curves and considerations of credit valuation adjustment.
    - **Interest Rate Option:** Valuation approaches for interest rate options include more complex models such as the Black futures option model or other binomial lattice stochastic interest rate models.
  - Valuation models utilized for interest rate derivatives are generally more complex than those utilized for debt instruments. They can range from advanced Excel-based models to programming platforms that employ financial engineering methods. These models may require significant modifications to make them compatible with the new SOFR rates, especially given that SOFR is not a forward-looking rate, with no reliable term structure available currently.
  - The inherent difference in credit risk between LIBOR and SOFR presents similar valuation considerations to those relevant to debt instruments.
  - Interest rate derivatives are significantly more sensitive to interest rate movements than debt instruments, thus volatility becomes a critical factor. Considering the limited period of SOFR historical data and thin trading volumes of SOFR-denominated instruments, it might be more difficult to reliably estimate the volatility associated with SOFR.



## RECENT DEVELOPMENTS

On March 5, 2021, the IBA and the FCA announced that all LIBOR settings will either cease to be provided by any administrator or will no longer be representative according to the following timeline:

- **December 31, 2021**
  - All GBP, EUR, CHF and JPY LIBOR settings
  - 1-week and 2-month USD LIBOR settings
- **June 30, 2023**
  - Overnight and 1-, 3-, 6- and 12-month USD LIBOR settings

For derivatives, ISDA stated that the FCA's announcement constitutes an "Index Cessation Event" under the IBOR Fallbacks Supplement and related protocol for all LIBOR settings. As a result, the fallback spread adjustment published by Bloomberg was fixed as of the date of the announcement for all euro, sterling, Swiss franc, U.S. dollar and yen LIBOR settings. The ISDA fallbacks (i.e., the risk-free rate (RFR) plus spread adjustment) will automatically occur for outstanding derivatives contracts that incorporate the IBOR Fallbacks Supplement or are subject to adherence of the ISDA 2020 IBOR Fallbacks Protocol on (i) 12/31/2021 for outstanding derivatives referencing all euro, sterling, Swiss franc and yen LIBOR settings, and (ii) 6/30/2023 for outstanding derivatives referencing all U.S. dollar LIBOR settings.

For cash products, the ARRC confirmed on March 8, 2021 that the FCA's announcement constitutes a "Benchmark Transition Event" under the ARRC's recommended fallback language with respect to all USD LIBOR settings. Consequently, when the fallback rates apply, fallbacks for derivatives under ISDA documentation and fallbacks for non-consumer cash products that incorporate the ARRC-recommended fallback language will apply the same (now fixed) spread adjustment values to the recommended fallback RFRs. While there may be notice requirements by the agent/sole lender related to the occurrence of the Benchmark Transition Event under the relevant agreement, the occurrence of a Benchmark Transition Event does not require an immediate transition under ARRC-recommended fallback language. Instead, actual transition under ARRC-recommended hardwired fallback language is based upon the "Benchmark Replacement Date," which is expected to be on or immediately after (i) 12/31/2021 for 1-week and 2-month USD LIBOR, and (ii) 6/30/2023 for Overnight, 1-month, 3-month, 6-month, and 12-month USD LIBOR.

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