USD Credit Sensitive Rates for LIBOR Replacement

	LIBOR	SOFR	BSBY	CRITS	Ameribor	Bank Yield Index
Name of the rate	London Interbank Offering Rate	Secured Overnight Financing Rate	Bloomberg Short-Term Bank Yield Index	IHS Markit USD Credit Spread Adjustment & Rate	American Interbank Offered Rate (AMERIBOR)	ICE Bank Yield Index
Who prepares it	Intercontinental Exchange (ICE)	Federal Reserve Bank of New York	Bloomberg	IHS Markit	American Financial Exchange, LLC (AFX)	Intercontinental Exchange (ICE)
What is the basis for the calculation	Several benchmarks reflecting the average interest rate that large international banks charge each other for short-term loans. Every day, by 11 a.m. London time, the ICE Benchmark Administration (IBA) asks a panel of 11-16 contributor banks at what rate they could borrow funds, were they to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 a.m. London time. Trimmed arithmetic mean (outlier responses are eliminated) rounded to five decimal places.	Broad, trimmed, secured rate based on transaction data from a variety of sources: tri-party repos (through Bank of New York Mellon); the DTCC's General Collateral Financing (GCF) service; and bilateral repos cleared by the DTCC's FICC subsidiary. Transactions by the Federal Reserve in the repo market will not be included. Calculated as a volume-weighted median, which is the rate associated with transactions at the 50th percentile of transaction volume.	Anonymized transactions and *executable* quotes of a 3 day rolling period with no subjective input. The rates are based on instruments that have averaged more than $200B sourced from Bloomberg's FX and money market electronic trading solutions and trade s of senior unsecured bank corporate bonds (FINRA). A curve fitting methodology calculates the term years.	Datasets: Certificates of deposit, commercial paper, corporate bond transactions and indicative price quotes. Filtering: Institution type, transaction size, coupon range, issuance size, days to maturity and various bond types/characteristics. Only takes data from banking institutions, filters out data from industrials, utilities, non-bank financials.	Interest rate benchmark calculated as a volume-weighted average of the daily transactions in the Ameribor overnight unsecured loan market on the AFX, which is a self-regulated exchange operating since 2015. Ameribor is an interest rate expressed on an actual/360 day count and following business day convention basis that is rounded to the fifth decimal place.	Forward-looking transaction-based benchmark derived from: (i) primary market whole, unsecured funding transactions for large, internationally active banks; and (ii) secondary market transactions in wholesale, unsecured bonds issued by large, internationally active banks. Based on a transaction data for a rolling 5-day collection window. Across the 5 days, this requires a minimum aggregate funding transaction volume of $15 billion across all eligible transactions and a

						minimum eligible transaction count of 100.
What Tenors are available	Overnight, 1W, 1M, 2M, 3M, 6M, and 12M for each of USD, GBP, EUR, CHF, and JPY (35 tenors altogether).	Overnight only (see above for published averages).	Overnight, 1 month, 3 month, 6 month and 12 month terms.	USD for 1D, 1M, 3M, 6M, and 12M (produced daily).	The headline rate is an overnight tenor, but there are mentions of 1- and 3-month tenors and there appear to be 7- and 14-day tenors, as well.	USD for 1M, 3M, 6M, and 12M, from the curve values at 30, 91, 182 and 365 days to maturity respectively.
Where is it published	Published each London business day at 11:55 AM by the IBA and available real-time through redistribution partners with a license from IBA, like Bloomberg/ other services.	Published on the New York Fed website every business day at 8:00 a.m. E.T.	Bloomberg Terminals, Tickers BSBYON, BSBY1M, BSBY3M, etc. at 8:00 am E.T. It is available on a delayed basis at Bloomberg.com	IHS Markit website at 8 A.M. Eastern on T+1 basis	It is published each night by Cboe Global Markets, Inc. (Cboe) under the ticker 'AMERIBOR' and accessible here: https://ameribor.net	Published daily on the ICE website.
If a "floor" included	No	No built-in floor. Spread adjustment was set and is published in the ARRC literature.	No built-in floor or spread adjustment.	N/A	There does not appear to be a floor. Ameribor futures can reflect zero or negative rates.	There does not appear to be a floor.
Is it IOSCO compliant (see below)	Yes – assessed by IOSCO itself	No – Principle 2 (Oversight of Third Parties) is not applicable because third parties are not involved in the collection of inputs to the Benchmarks, as the Federal Reserve Bank of New York sources all data directly from either the counterparties to	Yes. By independent assurance review announced 4/6/2021.	Yes, all IHS benchmarks administered in line with IOSCO principles. However, have not specifically asked IOSCO.	Yes, Ameribor announced that it is in alignment with IOSCO principles on 8/15/2019.	As of the latest update in May 2020, ICE Benchmark Administration was still seeking external assurance regarding compliance with IOSCO.

		the trades underlying the Benchmarks or the intermediaries on whose systems those trades are cleared and settled. SOFR is compliant with the other principles. As detailed in the New York Fed's Statement of Compliance, the New York Fed has endeavored to adopt policies and procedures consistent with best practices for financial benchmarks. The New York Fed's Audit Group has concluded that the internal control structure over the production of the EFFR, OBFR, TGCR, BGCR and SOFR is effective and that the production of these rates is compliant with the applicable sections of the IOSCO Principles for Financial Benchmarks (the Principles). The New York Fed will assess the compliance of the				

		reference rates with the Principles on an annual basis and issue a Statement of Compliance accordingly.				
Are there calculation or use contingencies	Yes. There is no LIBOR publication on public holidays in London. In addition, there is no publication in the overnight tenor for a currency whose major financial center has a public holiday. If four or fewer bank submissions are received, IBA will publish the previous day's LIBOR rate for the affected currencies.	Yes, for bank holidays that are otherwise business days In the event primary data is not available, the New York Fed uses information collected through a daily survey conducted by its Trading Desk of primary dealers' repo borrowing activity.	Yes. Curve fitting methodology and discount of executable transactions (1/8) v executed transactions.	Calculation: bucket level outlier testing, weight per source and weight adjusted for issuer cap, then it takes a weighted average over the last five days Fallback: If certain thresholds not met, then use data from previous day's transaction to fill shortfall.	a. When AFX is closed, such as on weekends or holidays, or disrupted, the previous day's rate is used. b. Upon the occurrence of an unforeseen exogenous event (such as an event or circumstances which have a material impact on the credit markets), the Ameribor benchmark interest rate is determined based on the recent historical Ameribor benchmark interest rate spread in relation to the effective federal funds rate (EFFR). The recent historical Ameribor spread to EFFR will be determined as the average differential between the EFFR and the Ameribor benchmark interest	All transactions are initially equally weighted, regardless of transaction size. A max weight threshold – 10% of the total weight of bond transactions and 15% of funding transactions is calculated. Transactions that exceed these thresholds are reduced proportionately in transaction weight. An outlier filter identifies data points farther than the threshold (currently 200 basis points) from the fitted curve. These are removed from the set of transactions and the robust regression is recalculated.

					rate during the prior 90 business day period. The recent historical Ameribor spread will then be added to the daily closing EFFR on the relevant day in order to determine the closing Ameribor benchmark interest rate for that day until such time as the AFX Committee on Benchmark Oversight determines that the unforeseen exogenous event has been terminated.	
Other?	1W and 2M tenors will be phased out by 2022, and the remaining tenors by June 30, 2023.	In addition to the daily SOFR, the New York Fed also publishes three compounded averages of the SOFR with tenors of 30-, 90-, and 180-calendar days and a SOFR Index that allows for the calculation of compounded average rates over custom time periods. Note that, whereas the SOFR is published one business day following its value date (the day when	Bloomberg says BSBY will soon be available for licensing through its affiliate BISL in additional jurisdictions, including the U.K. and the EU. As of 5/19/21, BSBY is BofA's preferred benchmark replacement for Corporate Loans.	Notes that term SOFR likely not available within the next year. Will produce a credit spread adjustment and rate. Same-calendar as SOFR (i.e. the SIFMA calendar).	a. More than 99% correlation with LIBOR. b. Massively expanding use since introduction in 2015 (around $2 Billion average daily volume).	IBA plans to continue testing and observe outcomes against LIBOR, but no guarantee that IBA will continue with testing or publication of the Bank Yield Index.

		overnight trades were negotiated), the SOFR averages and index are published on their value date. This approach aligns with the economics of the repo market, where the repo rate determines the cost of borrowing through the transaction's maturity date. For the overnight repo transactions comprising the SOFR, the maturity date is always the next business day (when the SOFR is published), so the index and averages will always have a value date one business day later than the value date of the final SOFR observation included.				