White Paper

The Elimination of LIBOR

June 2018

Farewell to LIBOR

Since its origination in 1986, the London Interbank Offered Rate (LIBOR) has been a standard benchmark for short-term rates. LIBOR is reset daily based on submissions from a collection of contributing banks. These banks submit yields at which they believe they could obtain short-term loans from other banks. The average rate sets the benchmark for floating rate securities and other financial transactions.

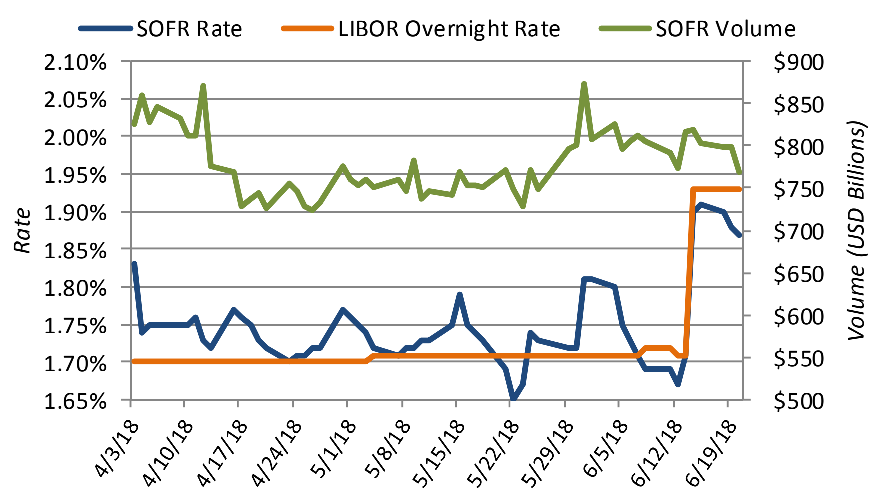
During the financial crisis, allegations of attempted LIBOR influence by submitters arose. Since the majority of LIBOR submissions are based on judgments, as opposed to actual transactions, the process is vulnerable to manipulation. It became front page news when it emerged that as early as 2003, banks were submitting altered daily data to portray a false picture of their financial health. The reduction in actual transaction activity was believed to provide the opportunity for manipulation.

In the summer of 2017, Andrew Bailey, CEO of the Financial Conduct Authority in London, announced plans to phase out LIBOR by the end of 2021. The Alternative Reference Rates Committee (ARRC), a group of banks convened by the Federal Reserve, was tasked with finding a LIBOR alternative. A plan released in December 2017, directed the Federal Reserve Bank of New York to produce three new reference rates based on repo transactions from various clearinghouses. The intent was for the options to reflect the actual cost of short-term secured borrowing in strong, highly liquid markets.

Welcome to SOFR

The ARRC recommended the Secured Overnight Financing Rate (SOFR), the most substantial of the three choices, as its preferred alternative rate mechanism. SOFR is a transactions-based rate, calculated by sorting all overnight repo transactions collateralized by Treasuries in order from lowest to highest on a volume-weighted basis. The volume-weighted median is chosen as the "published" rate. SOFR is based on cash borrowing transactions secured by U.S. Treasuries and more accurately represents risk-free rates. This is an important element in order to provide a known and trusted benchmark for market participants and is in contrast to LIBOR, which reflected banking sector risk. Because SOFR includes more segments of the market, it should prove more reflective of market conditions and changing market preferences over time.

The publication of SOFR began on April 3, 2018. For comparison, the chart to the right shows the SOFR and LIBOR Overnight Rates over the first 11 weeks. This also highlights the volume of transactions contributing to the rate. While the new rate provides some clarity, there are still unknowns regarding the implementation and adoption of the new rate. One specific concern is that LIBOR rates stretch from overnight to 12 months, while the SOFR will only be calculated on an overnight basis. This limitation, resulting in possible duration mismatches, needs to be addressed more broadly over the next 12 to



Source: LIM, Bloomberg

24 months. SOFR requires time to be tested operationally in order to ultimately be trusted by the investment community.

To ensure a smooth transition, all applicable newly issued securities that mature after 2021 should reference SOFR. This transition would leave only legacy securities in need of addressing a move from LIBOR to the new benchmark. Markets do not like uncertainty, so there is potential for a period of increased volatility in LIBOR-based securities.

LIBOR Exposure

The chart below shows total LIBOR exposure across the U.S. credit markets. LIM's primary exposure comes in investment grade floating rate notes, financial hybrids, and bank preferreds. The investment grade floater universe, which is roughly $400 billion, is where LIM portfolios have the most exposure. However, these securities have a relatively short duration, limiting the potential for confusion.

Segments of U.S. Credit Markets Referencing LIBOR

Market	Amount Outanding (bn)	Average Maturity	% Maturing After Dec-21
Syndicated Loans	$928	Oct-22	68%
Investment Grade Floating Rate Notes	$403	Mar-20	19%
Corporate/Insurance hybrids	$100	Aug-58	100%
US Bank Perpetual Preferreds	$94	Perpetual	100%
USD Contingent Convertible Bonds	$94	Perpetual	100%
USD Bank Total Loss-absorbing Capacity Debt	$58	Mar-29	96%

Source: Bloomberg Barclays, August 2017

Approximately 20% of asset backed security (ABS) issuance has been indexed to LIBOR in any given year. The risk is, again, mitigated by the short nature of ABS debt. With the average duration of securities under four years, most of the market will have the opportunity to reset to SOFR before LIBOR is discontinued. Across our portfolios, we own very few floating rate ABS securities that mature after 2021. These securities each have a back-up index in the event that LIBOR is no longer available. For any new floating rate securities purchased, we pay close attention to deal documents.

Moving Forward

When trading SOFR products, particularly very short-dated ones, market participants will likely have to be much more cognizant of important calendar dates that tend to impact repo markets. These include month- and quarter-ends, Treasury settlements, and cash flows from government sponsored enterprise (GSE) securities. Repo issuance can increase or decrease during these periods based on demand.

LIM's ongoing trading and review of securities indexed to LIBOR has already pivoted from LIBOR as the sole valuation. Instead, we measure all securities to the underlying Treasury. By using the interpolated Treasury curve, we are able to accurately compare relative value across sectors. In addition, portfolios have limited exposure to floating rate securities that mature beyond 2021. Regardless, we will continue to monitor the process of transitioning to SOFR and provide any relevant updates.