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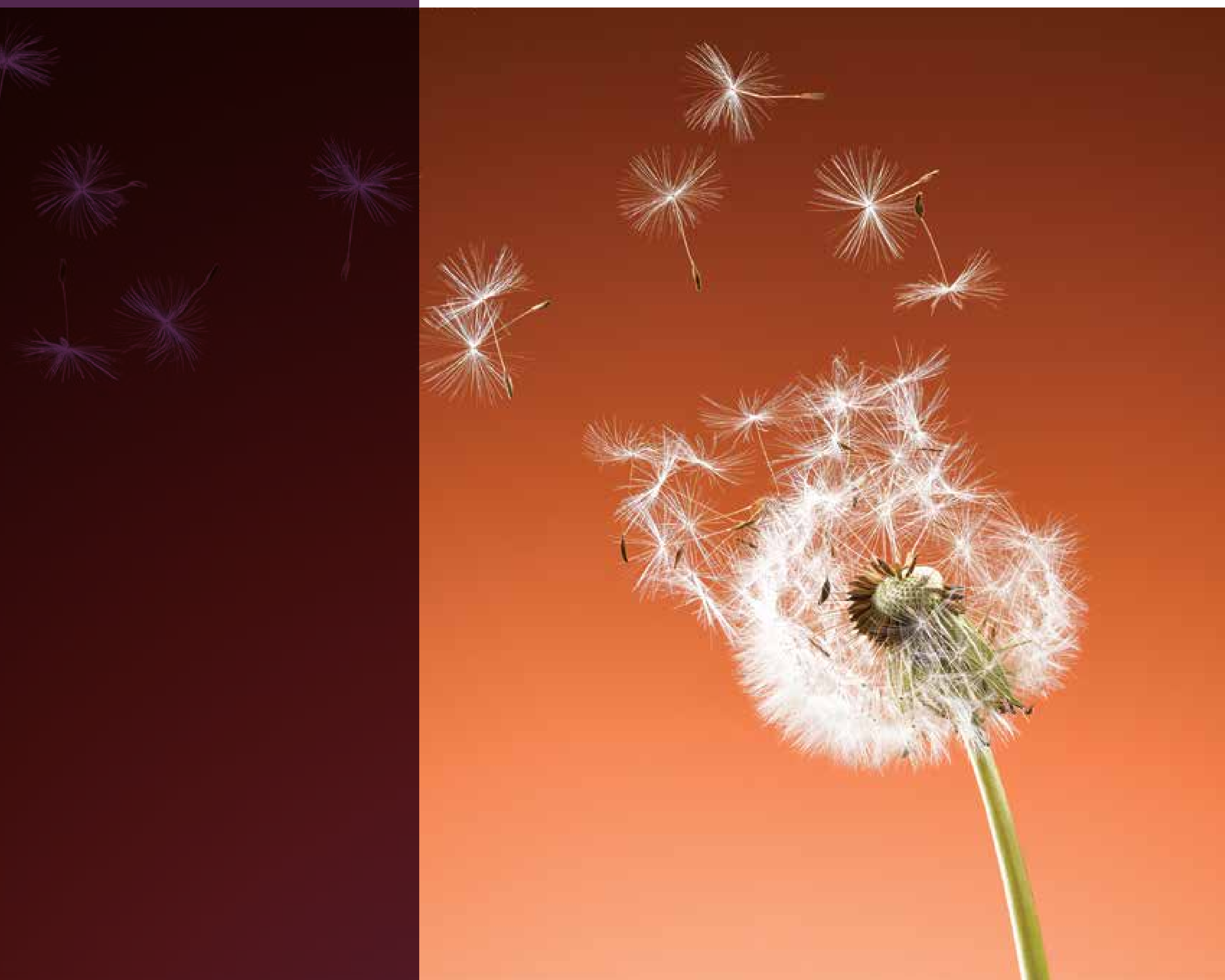
The Transition Away from Libor

SOFR Is the 'Chosen Rate' But It Is Not Without Risk

September 2022



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Report Highlights

- After Dec. 31, 2021, U.S. dollar Libor is no longer quoted for one-week and two-week tenors and, with few exceptions, no new contracts will be written based on Libor. The next major deadline is June 30, 2023, after which U.S. dollar Libor will no longer be quoted for any tenor.

- The Secured Overnight Financing Rate (SOFR) is just one of several viable Libor substitutes, which also include the American Interbank Offered Rate (Ameribor) and the Bloomberg Short-Term Bank Yield Index (BSBY). SOFR appears to be the early leader over Ameribor, BSBY, and others in the march to replace Libor.

- Since SOFR-linked benchmarks are based on overnight financing activity secured by U.S. Treasury securities, they do not match the credit-risk sensitive nature of the other indexes. This feature may result in performance differences during periods of credit stress. It will likely take a full credit cycle for market participants to understand how the different indexes will perform.

- Guggenheim is monitoring the evolving environment carefully. We recognize the strengths and weaknesses of each alternative reference rate and are preparing our portfolios and systems for the range of options and market outcomes.

> Despite the market advantage that the ARRC bestowed on SOFR, market participants....are free to choose whatever rate they find most suitable for their business model.

Introduction

Market adoption of a rate or rates to replace the troubled London Interbank Offered Rate, or Libor, is no longer a hypothetical issue, because the first deadline for the transition away from Libor has come and gone. After Dec. 31, 2021, U.S. dollar Libor is no longer quoted for one-week and two-week tenors and, with few exceptions, no new contracts will be written based on Libor. The next major deadline is June 30, 2023, after which U.S. dollar Libor will no longer be quoted for any tenor, including the benchmark overnight, one-month, three-month, six-month, and one-year Libor rates.

There are several contenders in the race to replace Libor, and as fixed-income market participants determine their reference rate preferences, the end result may be a market that includes a range of options. The Secured Overnight Financing Rate (SOFR), which for years has been advanced as the preferred replacement for Libor, is just one of several viable Libor substitutes, which also include the American Interbank Offered Rate (Ameribor) and the Bloomberg Short-Term Bank Yield Index (BSBY). SOFR has many strengths and advantages over Libor, but Ameribor and BSBY have a credit-sensitive component, a characteristic that SOFR lacks, that enables them to better reflect changes in credit risk sentiment, especially in times of crisis.

The reasons for seeking a replacement for Libor are well known. The rate is based on estimates provided by a small number of leading banks in London and not actual transactions, which made it vulnerable to manipulation by the rate-setting banks and unreliable during times of market crisis. The Alternative Reference Rate Committee (ARRC), the private-market participant group convened by U.S. financial regulators in 2014 to identify risk-free alternative reference rates for U.S. dollar Libor, chose SOFR—an overnight Treasury repo rate created in 2018 by the Federal Reserve Bank of New York and published daily—as the rate that represents the best practice for use in certain new U.S. dollar derivatives and other financial contracts.

Despite the market advantage that the ARRC bestowed on SOFR, market participants are not mandated to use it. Indeed, the latest U.S. omnibus appropriations package states that banks are free to choose whatever rate they find most suitable for their business model. Measured by market adoption, SOFR appears to be the early leader over Ameribor, BSBY, and others in the march to replace Libor. However, as markets adjust to the post-Libor world, those who use or consume financial products with short-term reference rates—lenders (including banks and other financial institutions), borrowers, investors, hedgers—will be able to determine which reference rate is best suited for their needs.

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Alternatives for Replacing Libor

SOFR is calculated as a volume-weighted median of transactions cleared through the Fixed Income Clearing Corporation in three large and very liquid overnight Treasury repurchase agreement (repo) markets: tri-party repo, General Collateral Finance (GCF) repo, and bilateral Treasury repo. With underlying market size and liquidity of nearly $1 trillion per day, SOFR represents the cost of secured lending and borrowing collateralized by Treasury securities for the broker-dealers, money market funds, asset managers, insurance companies, and others who participate in the market, making it suitable as a general proxy for interest rates in accounting, valuation, and financial modeling processes. Perhaps most importantly, because it is based on actual transactions and not a survey of selected market participants, it is virtually impossible to manipulate.

The Ameribor index, created by the American Financial Exchange (AFX), offers a 30-day and 90-day term based on short-term unsecured transactions of mid-size regional banks and other lenders that occur on AFX's electronic trading platform. The transactions are conducted by institutions representing 186 banks and approximately 1,200 correspondents with assets of $5.25 trillion, the equivalent of 25 percent of the U.S. banking system. The 30-day term is derived using a data set with an average of approximately $50 billion in unique transactions a day among over 100 distinct participants.

The BSBY index uses anonymized transactions involving wholesale deposits, CDs, commercial paper and short-term bonds and pricing observations sourced through Bloomberg's foreign exchange and money-market electronic trading platform to calculate overnight, one-month, three-month, six-month, and 12-month rates. The credit quality of instruments included in the BSBY index is generally higher than that of the Libor panel banks. BSBY rates are based on instruments that have average trading volume of more than $165 billion over the past three years and more than $200 billion when factoring in executable quotes.

SOFR: Potential Risks of a Risk-Free Index

Since SOFR-linked benchmarks are based on overnight financing activity secured by U.S. Treasury securities, they do not match the credit-risk sensitive nature of the other indexes. This difference is an important factor to lenders and investors. While banks may be interested in using a credit-sensitive rate to meet customer needs and better match their own funding models, investors who own SOFR-linked loans or bonds should be aware that the coupon on their floating-rate instruments will likely not adjust to reflect rising or falling credit risk, particularly

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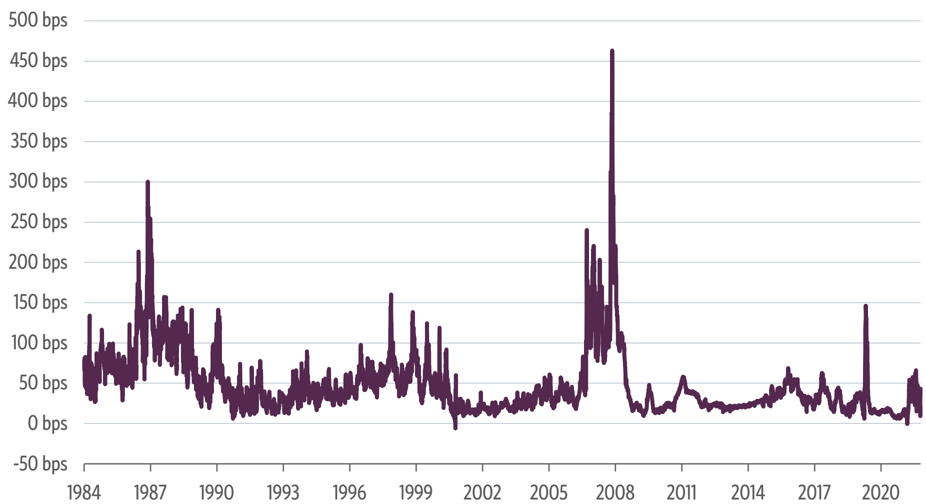
during periods of credit stress. The consequence of this condition is that the spread on floating-rate securities linked to SOFR is likely to track T-bills more closely than short bank funding or credit rates and will not reflect the current credit environment. Therefore if the credit risk is understated or not reflected in the SOFR index, the dollar price of the floating-rate investment will fall to reflect the impact of spread widening between the SOFR index and other short-term credit instruments. This would be an incremental price deterioration in addition to any spread widening related to the underlying borrower's credit quality. The price of the floating-rate investment therefore could be adversely impacted twice, both as a result of the basis widening of the index and the spread widening associated with the credit of the borrower.

Although the SOFR market dynamics are largely untested, we would expect the spread between a credit-sensitive index and the SOFR benchmark to behave similar to the TED Spread, which is the difference between the three-month Treasury bill and the three-month Libor rate. The TED Spread offers historical precedent of how risk is reflected in a credit-sensitive short-term rate during a credit cycle. As the chart below demonstrates, the TED Spread spiked when credit risk sentiment worsened, most notably during the months leading up to the 1987 market crash, the 1998 Long-Term Capital Management crisis, the Great Financial Crisis, and the start of the COVID panic.

TED Spread Reflects Perceived Credit Risk

Spread Between 3-Month Libor and 3-Month T-bills



Source: Guggenheim Investments, Bloomberg. Data as of 9.19.2022.

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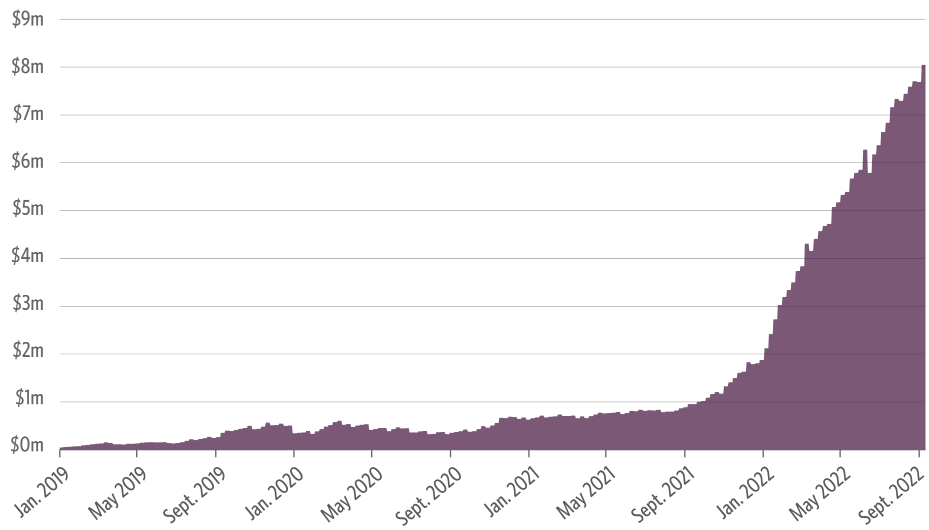
In the event of a similar credit crisis, there would likely be significant differences between the performance of SOFR and Ameribor or BSBY. As a reflection of a secured, risk-free rate, SOFR would behave similar to a Treasury rate and likely benefit from a flight to quality during a credit crisis, while Ameribor and BSBY would likely reflect the perception of worsening credit risk. A holder of floating-rate bonds who wants to be compensated for that increased risk may prefer that the reference rate had a credit component.

SOFR Leads the Way, Despite Risks

As we have come to the official end of some Libor tenors, and the Fed has begun to tighten monetary policy—with rate hikes driving up demand for short duration exposure—acceptance and use of SOFR has accelerated in 2022.

SOFR Trading Activity Rises

1-Month and 3-Month SOFR Open Interest (Futures and Options)



Source: Guggenheim Investments, Bloomberg, CFTC. Data as of 9.19.2022.

Despite the significant difference in performance during a credit event, as the amount of debt issuance referencing the different rates has risen, SOFR has led the way. The issuance of Libor-linked floating-rate corporate notes has declined and SOFR has emerged as the dominant reference rate for floating rate note issuance, with upwards of 97 percent of the market since the end of 2021.

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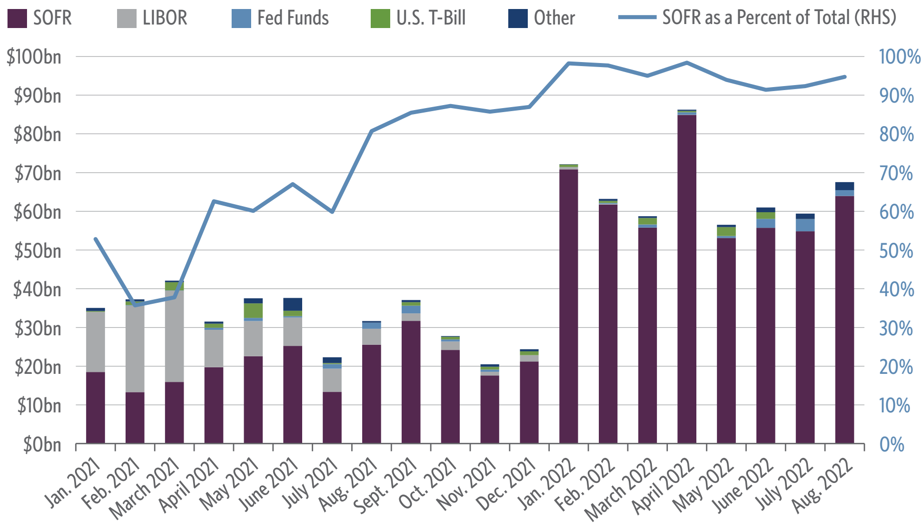
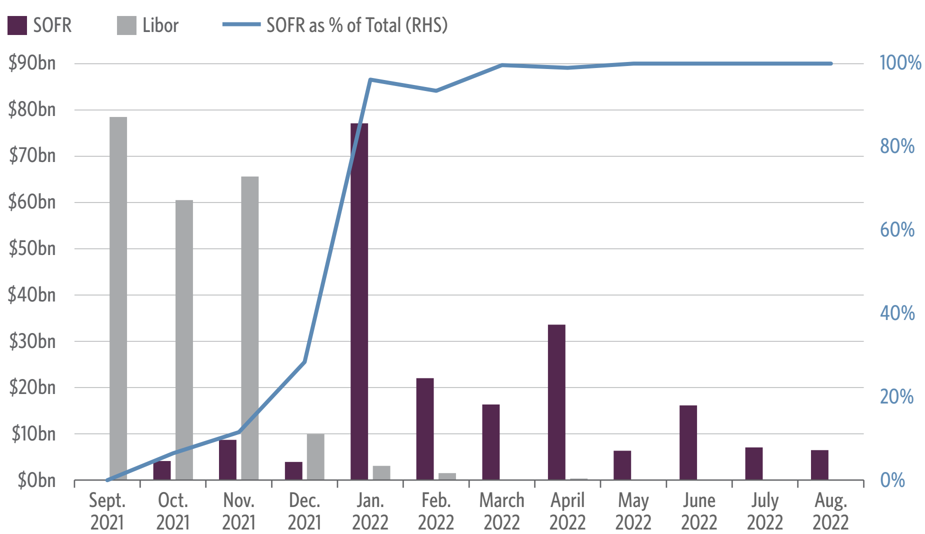
SOFR Dominates Market in Floating Rate Note Issuance



Source: Guggenheim Investments, Bloomberg. Data as of 8.31.2022.

Likewise, SOFR has taken over as the leading reference rate in the syndicated loan market, with 97 percent market share of the $190 billion in leveraged loans issued as of Aug. 31, 2022 (new issue, add-ons, and repricings).

SOFR Takes the Lead in Syndicated Lending



Source: Guggenheim Investments, LCD. Data as of 8.31.2022.

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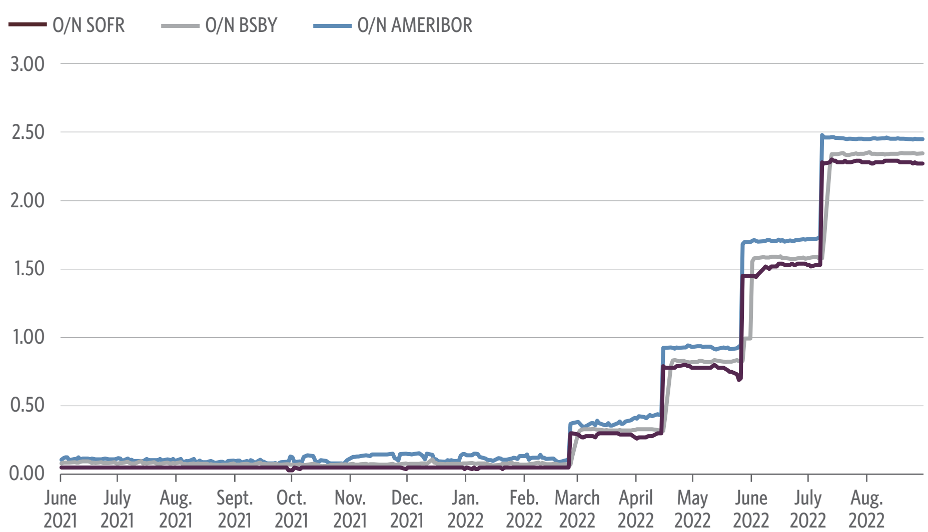
Since the Ameribor and BSBY benchmarks are based on actual transactions, their creators say they represent a true picture of the unsecured forward-looking borrowing rate in the market, while also making them less susceptible to manipulation than Libor. To add this missing credit element to SOFR, some market participants have begun adding a credit spread, although that spread is typically fixed over time.

Completing the Transition from Libor Will Take a Full Credit Cycle

As the Libor alternatives find their footing in the market, participants and regulators are still evaluating their pros and cons. While SOFR has been criticized for its lack of a credit component, some believe that the small bank transactions captured by Ameribor are not representative of the market as a whole. Securities and Exchange Commission Chair Gary Gensler noted last year that BSBY shares flaws with Libor in that both benchmarks are based on unsecured term, bank-to-bank lending that can "virtually disappear in a crisis." The Office of the Comptroller of the Currency said that while banks can use any replacement rate they choose, in the post-Libor world it would essentially consider the usage of non-SOFR rates as meriting closer supervisory scrutiny.

The nascent post-Libor world is still a work in progress. It is possible that multiple rates will gain acceptance for different applications, with some participants opting for a portfolio approach to choosing reference rates. While SOFR is emerging as

SOFR, Ameribor, and BSBY Spreads Have Traded in a Relatively Stable Band



Source: Guggenheim Investments, Bloomberg. Data as of 9.19.2022.

the market leader to replace Libor, Ameribor and BSBY are seeing activity on some loan level transactions. Markets have functioned relatively smoothly during this initial period of transition, which means that the differences between the Libor alternatives may not be reflected in relative pricing. It may take a credit crisis for the market to gain a better understanding of how the Libor alternatives will behave, and how the different behavior will affect portfolio performance.

As the adjacent chart shows, the spreads between SOFR, Ameribor, and BSBY have been trading in a relatively stable band over the last 18 months, but the TED Spread example demonstrates that it is highly likely this will not be the case in the event of a significant market disruption. Guggenheim is monitoring the evolving environment carefully. We recognize the strengths and weaknesses of each alternative reference rate and are preparing our portfolios and systems for the range of options and market outcomes.

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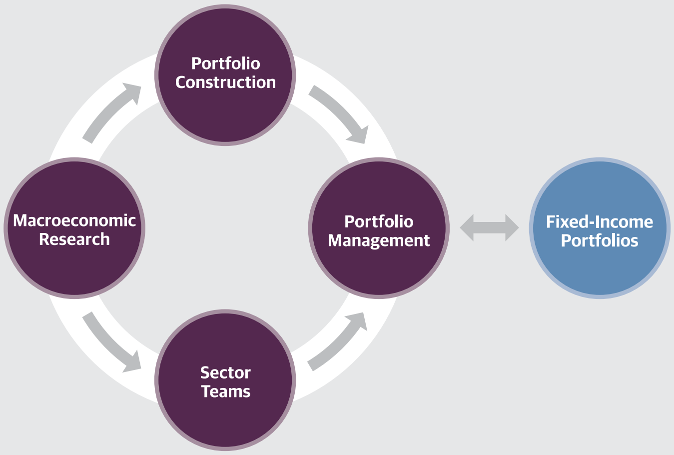

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