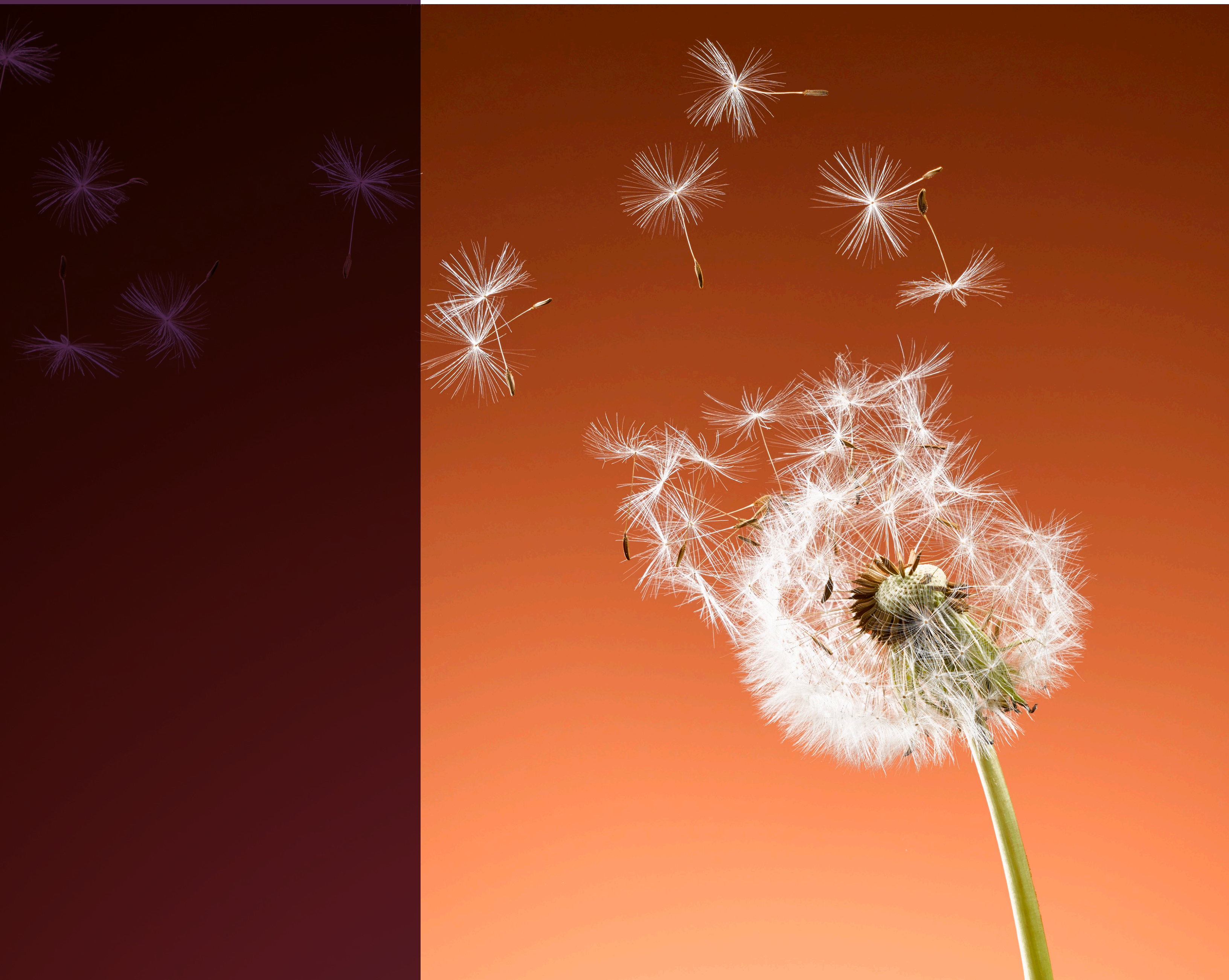
GUGGENHEIM

December 2019

The Transition Away from Libor

Much Progress, More Wood to Chop



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Report Highlights

- Transitioning away from the London Interbank Offered Rate (Libor) is an enormous undertaking for market participants, corporations, and regulators alike, with far-reaching consequences for households, businesses and financial intermediaries.

- In June 2017, the Alternative Reference Rates Committee (ARRC) selected as its preferred U.S. dollar Libor alternative the Secured Overnight Financing Rate (SOFR), an overnight Treasury repo rate published daily by the Federal Reserve Bank of New York. SOFR has several advantages over Libor, starting with its more than $1 trillion in underlying daily transaction volumes.

- Preparing market infrastructure for the transition from Libor to SOFR is well under way, but market development has been slow. The ARRC has published a "Paced Transition Plan" to address the market developments that must occur by the end of 2021.

- Guggenheim is actively preparing itself and its clients' portfolios, with a dedicated team meeting weekly to prepare for the Jan. 1, 2022, switch to SOFR. We will continue to provide updates on the progress we are making toward ensuring a smooth transition to a post-Libor world.

Introduction

> “Good progress has been made toward identifying alternative benchmarks around the globe and beginning the transition away from Libor, but there is still more work to be done.

The anticipated end of Libor as a reference rate is one of the most anticipated milestones in financial market history. Ever since the financial crisis exposed Libor’s flaws—including weak governance, vulnerability to manipulative activity, negligible unsecured interbank lending volumes, and the withdrawal of some banks from Libor panels—regulators and market participants have been working towards finding a replacement for Libor and establishing a framework for the transition. This process was given a deadline in July 2017 when the U.K. Financial Conduct Authority (FCA), which is responsible for regulating Libor, warned that Libor would not be sustained past the end of 2021.

Since that time, good progress has been made toward identifying alternative benchmarks around the globe and beginning the transition away from Libor, but there is still more work to be done. Both regulators and market participants need to step up their preparations for a post-Libor world, warned John Williams, the President of the Federal Reserve Bank of New York, in a recent speech. “If your firm is one of those hoping the problem will go away, or feeling nostalgic and counting on an extension to the deadline, take this message back: The clock is ticking, Libor’s days are numbered, and we all need to play our part in preparing the industry for Jan. 1, 2022.”

Guggenheim is not one of those firms. In this update to our previous note on this topic, we review recent developments and discuss the steps we are taking to ensure that our firm and our clients’ portfolios are properly prepared for the transition away from Libor. (Please note that while the focus of this review will be on U.S. dollar Libor, the challenge of Libor transition is global and affects multiple currencies and “IBORs.”)

The Transition Away from Libor

“Without advance planning, the end of Libor and transition to a replacement rate has the potential to be hugely disruptive.

Transitioning away from Libor is an enormous undertaking for market participants, corporations, and regulators alike, with far-reaching consequences for households, businesses and financial intermediaries. Libor is used as a reference rate for an estimated $200 trillion worth of financial contracts in the United States alone, including derivative instruments that hedge Libor, consumer and business loans that use Libor as a reference rate, and bonds, syndicated loans, or structured credit securities that are indexed to Libor for adjustable or floating rate coupons. The use of Libor in the day-to-day management of corporate treasury functions is also pervasive. Without advance planning, the end of Libor and transition to a replacement rate has the potential to be hugely disruptive.

The transition away from U.S. dollar Libor in favor of an alternative reference rate has been led by the Alternative Reference Rates Committee (ARRC), a group of market participants convened by the Federal Reserve. The ARRC’s membership is comprised of a broad set of private-market participants—including banks, asset managers, insurers, and industry trade organizations—and official sector ex-officio members. In June 2017, the ARRC selected as its preferred U.S. dollar Libor alternative the Secured Overnight Financing Rate (SOFR), an overnight Treasury repo rate published daily by the Federal Reserve Bank of New York.

The process of selecting SOFR as the designated successor to Libor was guided by the set of principles for financial benchmarks published by the Board of the International Organization of Securities Commissions (IOSCO) in 2013. The IOSCO Principles, which were endorsed by the Financial Stability Board as standards of best practice for benchmark administration, specify the framework to be used to administer benchmarks with respect to governance, quality of the benchmark, quality of the methodology, and accountability.

As noted above, the need to transition away from Libor is not limited to the United States; efforts to manage the transition to an alternative rate are also happening contemporaneously in most major currency jurisdictions, including the U.K., Switzerland, Japan, and the euro zone.

The Advantages of SOFR

> "SOFR has several advantages over Libor, starting with its more than $1 trillion in underlying daily transaction volumes.

SOFR may be a relatively new rate, having been launched by the New York Fed on April 3, 2018, but it is derived from transactions in a very large existing base of liquid markets. It is calculated as a volume-weighted median of transactions in three different overnight Treasury repurchase agreement (repo) markets: tri-party repo, General Collateral Finance (GCF) repo, and bilateral Treasury repo that is cleared through the Fixed Income Clearing Corporation (FICC).

SOFR has several advantages over Libor, starting with its more than $1 trillion in underlying daily transaction volumes. Due to the size and liquidity of the underlying markets, SOFR represents the general cost of secured lending and borrowing for the wide range of market participants involved in the repo market, including banks, broker-dealers, money market funds, asset managers, insurance companies, and more.

SOFR References Over $1 Trillion in Daily Repo Market Activity

Volume of Daily Secured Overnight Financing Rate Transactions, $ Billions

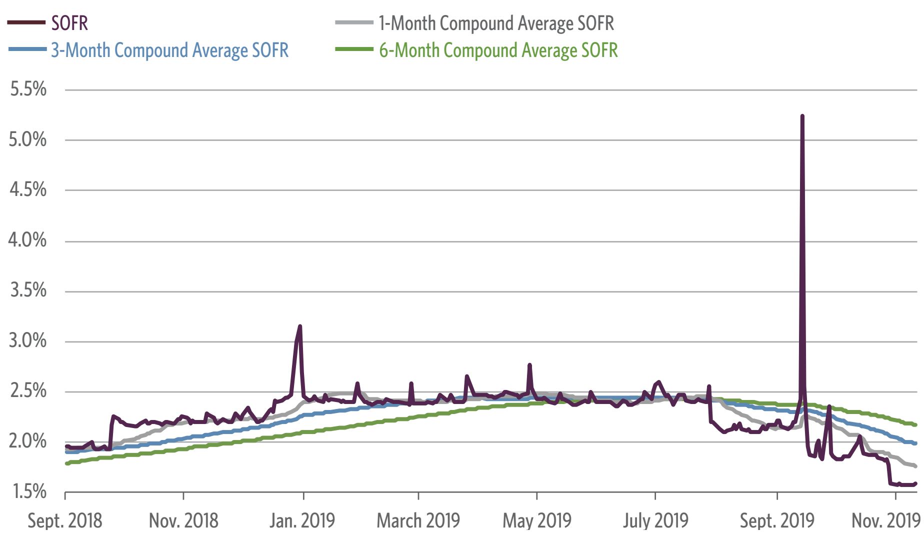
Source: Guggenheim Investments, Haver Analytics, New York Fed. Data as of 11.8.2019.

The ARRC considered other rates when reviewing alternatives to Libor (so-called "fallbacks"), but it ultimately recommended SOFR because it is a fully transaction-based, risk-free reference rate that is suitable to be used for products that historically have been linked to Libor. It is also suitable as a general proxy for interest rates in accounting, valuation, and financial modeling processes. Perhaps most importantly, because it encompasses transactions in a huge underlying market rather than a survey of selected market participants, it is virtually impossible to manipulate. SOFR also meets IOSCO's standards for benchmark rate governance, as underlying transaction data are collected, aggregated and published by the Federal Reserve Bank of New York rather than a private benchmark administrator.

While SOFR has many positive attributes, it is not an exact substitute for Libor (which may well be a net positive for the market). Recall that Libor, derived from a survey of large banks conducted by the Intercontinental Exchange (ICE), reflects what the surveyed banks say they think they would pay to borrow funds from another bank in a reasonable market size for short periods.

Whereas Libor is an unsecured rate with a credit component, SOFR is derived from rates on repo transactions that are collateralized by Treasury securities, making it a secured and virtually risk-free rate. As a result, Libor and SOFR

Recent Movements in SOFR and Compound Averages of SOFR



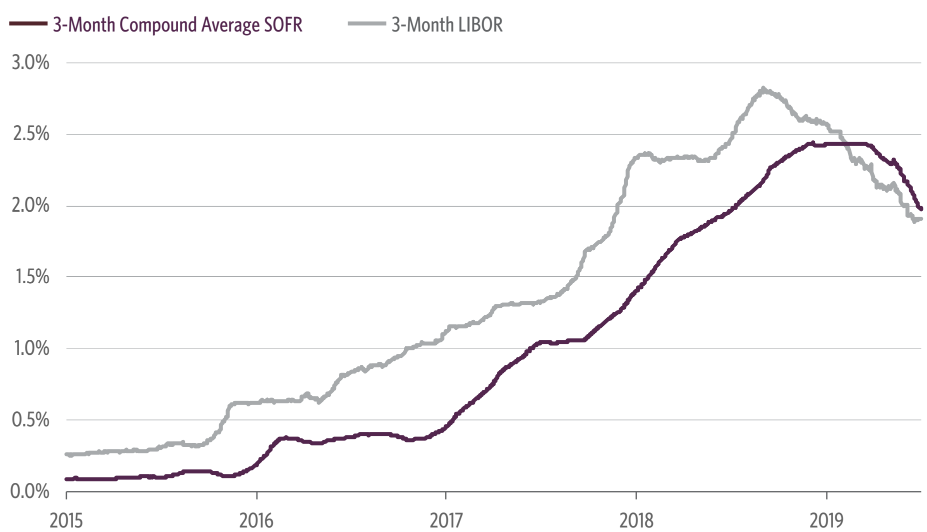
Source: Guggenheim Investments, ARRC, Bloomberg. Data as of 11.15.2019.

behave differently in different market conditions. SOFR is generally a lower rate than Libor and has proven to be more volatile than Libor because of its shorter tenor as well as fluctuations in supply and demand for collateralized borrowing. This volatility can be seen in spikes in overnight rates around quarter-end or, as was the case in mid-September, when the repo market is experiencing volatility for technical reasons.

As the ARRC points out, however, SOFR's one-month, three-month and six-month averages are much smoother than the more volatile overnight rate. In addition, the three-month compound average of the overnight Treasury repo rate for SOFR has historically been less volatile than three-month Libor.

Moreover, the Fed's response to the mid-September spike in repo rates, which has included overnight and term repo operations and large-scale outright bill purchases, demonstrates that it has a keen interest in maintaining the orderly functioning of the repo market as well as the necessary tools to keep repo rates in check.

Three-Month Compound Average of SOFR Is Less Volatile than Libor



Source: Guggenheim Investments, ARRC, Bloomberg. Data as of 11.15.2019.

Preparing for the Switch to SOFR

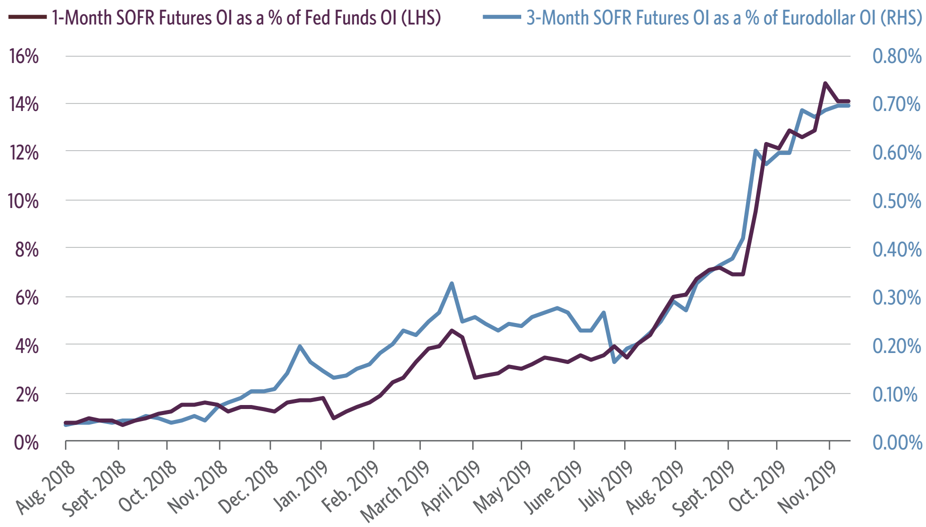
> "Preparing market infrastructure for transition from Libor to SOFR has been well under way, but market development is slow.

Preparing market infrastructure for transition from Libor to SOFR has been well under way, but market development is slow. After announcing the selection of SOFR as the successor to Libor, the ARRC published a "Paced Transition Plan" to address the market developments that must occur by the end of 2021 to help bring about a smooth transition. These workstreams are ongoing and in many cases are ahead of schedule, but there remains much work to be done. Next steps include:

- Building market liquidity, developing technology infrastructure, and driving demand for SOFR.
  - SOFR-linked markets must be deep and liquid enough, and technologically prepared to support the transition.
- Creating and implementing robust fallbacks.
  - When Libor is no longer in use, contractual fallback arrangements, as well as regulatory and accounting transitions, need to be in place to prevent potentially serious market disruptions from occurring.
- Raising awareness among consumer products groups.
  - The transition to SOFR must be fair and transparent for key parties and processes related to consumers.
- Educating and engaging relevant parties to ensure market readiness.
  - Market participants, trade associations, policymakers and the media need to understand and be prepared for the transition from Libor to SOFR.
- Coordinating across national working groups.
  - Other nations will also have to prepare for cross-currency and other workstreams, share best practices and implementation progress.

Even as this work progresses, the volume of instruments that actually use SOFR as a reference rate is still small. The open interest in one-month and three-month SOFR futures markets is a small fraction of the corresponding federal funds and Libor (Eurodollar) futures markets, respectively.

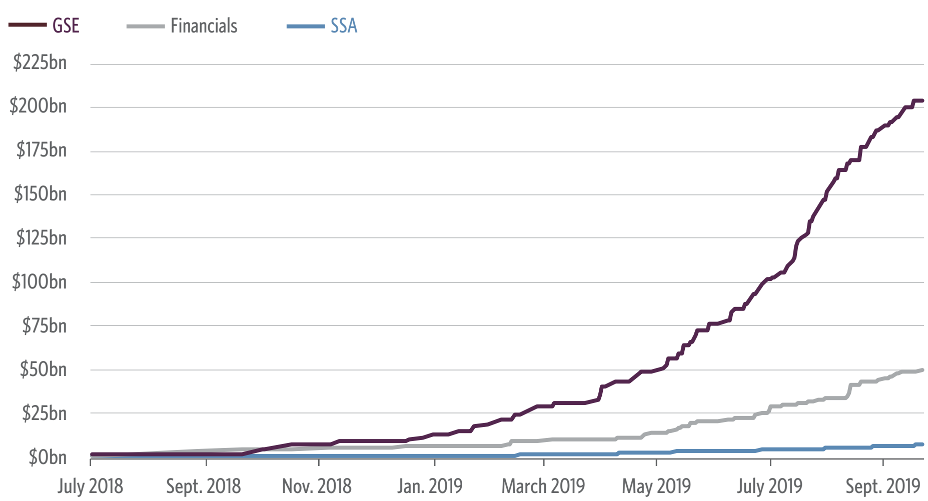
SOFR Futures Open Interest Has Grown, But Remains Relatively Small



Source: Guggenheim Investments, Bloomberg, CFTC. Note: Includes combined futures and options open interest. Data as of 11.12.2019.

Approximately $270 billion in floating-rate notes (FRNs) that use SOFR as a reference rate have been issued by 52 issuers. Nearly 79 percent of this total has been issued by U.S. housing-related Government Sponsored Enterprises (GSEs), with another 19 percent having been issued by private financial institutions and the balance issued by sovereigns, supranationals, and agencies.

The Market for SOFR-Linked Floating-Rate Notes Is Small But Growing



Source: Guggenheim, Bloomberg. Data as of 10.10.2019.

The U.S. Treasury is considering issuing its own SOFR FRN, though further study and preparation is needed. The Treasury Borrowing Advisory Committee has endorsed this effort, stating that the introduction of a SOFR-linked Treasury FRN "would be a significant step forward in boosting the liquidity of the SOFR market and could help expedite the overall market transition away from Libor."

Another sign of progress in the market is a letter sent last month by the Federal Housing Finance Agency (FHFA) to the 11 Federal Home Loan Banks instructing them that, as of December 31, 2019, they should stop making investments tied to Libor with a contractual maturity beyond December 31, 2021. Furthermore, the Federal Home Loan Banks were directed that after March 31, 2020, they should no longer enter into any Libor-based transactions involving advances, debt, derivatives, or other products with maturities beyond December 31, 2021. We expect this to contribute to the development of SOFR-linked markets over time.

One of the headwinds to the development of deeper markets is that SOFR is an overnight rate. With SOFR swap markets still under development, market participants lack a SOFR term structure. A term SOFR rate could at some point be used to price loans or securities based on a three-month term SOFR fixing, for example, making its tenor more comparable to Libor. This forward-looking term rate is known as an in advance structure, which would reference an average of SOFR expectations observed before the current interest period begins. The ARRC has proposed that a private administrator could construct a forward-looking term rate based on SOFR derivatives markets once those markets develop enough liquidity.

The alternative, backward-looking approach is known as an in arrears structure, which would reference the average SOFR rate that prevailed over the current interest period. To that end, the New York Fed is preparing average SOFR rates and a SOFR index, with the goal of publishing them daily by the middle of 2020.

Guggenheim's Transition Progress

> "Guggenheim is actively preparing itself and its clients' portfolios for the transition.

Planning for a smooth transition to a post-Libor world is a significant project-management challenge, and Guggenheim is actively preparing itself and its clients' portfolios for the transition. As part of its mandate to promote the successful transition away from Libor, the ARRC published a planning guide to help firms prepare themselves, which includes guidance to: Establish program governance; identify and validate portfolio securities' exposure to Libor; develop product strategy for SOFR replacements; assess contractual remediation impact and design plan; develop operational, technology readiness and risk management plans; and prepare for accounting, reporting, tax, and regulatory effects.

Guggenheim has taken the following steps towards preparing for the transition:

- Implemented a program structure and governance model.
- Established the Libor Transition Core Team (the Core Team) for oversight and coordination.
- Engaged project team leads across functional business groups on their plans, tasks, risks and resources.
- Identified and engaged service providers and counterparties with critical roles in operations and the investing process that will need to be coordinated with our efforts.
- Developed an exposure reporting and monitoring framework with input from sector leads to identify the impacted population.
- Established a legal framework for review and remediation and initiated legal review.
- Created an internal shared portal enabling centralized transparency into the status/progress of the project, analysis, metrics, and reference documentation for the Libor project teams.

The scale and scope of this work is enormous and requires a significant allocation of resources, both during the transition and beyond. Guggenheim's Core Team, which consists of lead representatives from portfolio management, sector teams, risk, operations, accounting, and legal, holds weekly meetings to steer the direction of the project and prepare update memos for all impacted business groups. The Core Team manages the workstreams of a cross-section of different internal business units to ensure that the many identified project tasks are working toward resolution. In addition, the Core Team engages with multiple third-party relationships, including operating platforms, custodians, administrators, tax systems, data providers, fund accountants, and more to coordinate Libor transition plans.

At the heart of the Core Team's work on the portfolios is the identification of securities with exposure to Libor and a maturity beyond Jan. 1, 2022. For the thousands of impacted securities and transactions, the principal work is related to determining whether and to what extent the governing documentation contemplates changes to the floating rate in the event Libor (or the key IBOR for other jurisdictions) no longer exists (or ceases to be representative); whether and to what extent changes to such terms are necessary and/or desirable; the manner of dealing with differences in the relative value of the security or transaction in a pre- and post-Libor setting; and evaluating basis risk between cash assets and related hedges, if any. Part of the challenge lies in the fact that this transition to consistent fallback language will differ by product type, because the documentation and governance structures will differ for such instruments as bilateral loans, syndicated loans, floating rate notes, structured products and derivatives.

More and more new issues are carrying language that will be helpful when it comes time to transition. Several collateralized loan obligation (CLO) managers have recently issued deals that automatically convert their CLO liabilities to SOFR if Libor is no longer quoted at a future date, the first of their kind to do so. A crop of new deals is choosing "hardwired" fallback language that dictates that if Libor were to cease, CLO liabilities would automatically fall back to some version of SOFR, plus a spread adjustment (in some cases, an adjustment that will be set out by the International Swaps and Derivatives Association (ISDA) in the very near future). We believe that as more transactions occur with language like this, the adoption rate and transaction volumes will increase.

More Wood to Chop

"There is more work to be done on both an individual firm level as well as a market structure level.

For market participants, there is more work to be done on both an individual firm level as well as a market structure level. The level of preparedness will vary across asset managers and their clients, service providers, intermediaries, regulators and more. It remains to be seen whether all relevant parties will be ready when the time comes for the transition, and what systemic weaknesses will be exposed if they are not.

From a market perspective, we agree with many commentators who have suggested that acceptance of SOFR-based products is a chicken-and-egg situation. Without a liquid derivatives market, it will be difficult for the cash market to develop, and vice versa. Nevertheless, we expect that volumes of relevant markets will continue to expand.

We will continue to provide updates on the progress we are making toward ensuring a smooth transition to a post-Libor world.

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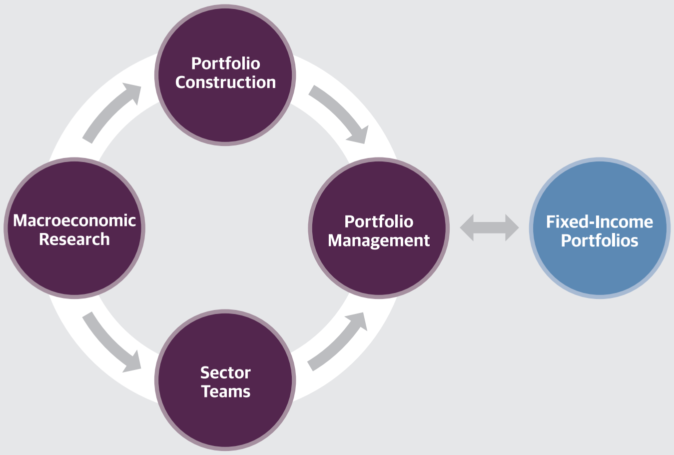
Guggenheim's Investment Process

Guggenheim's fixed-income portfolios are managed by a systematic, disciplined investment process designed to mitigate behavioral biases and lead to better decision-making. Our investment process is structured to allow our best research and ideas across specialized teams to be brought together and expressed in actively managed portfolios. We disaggregated fixed-income investment management into four primary and independent functions—Macroeconomic Research, Sector Teams, Portfolio Construction, and Portfolio Management—that work together to deliver a predictable, scalable, and repeatable process. Our pursuit of compelling risk-adjusted return opportunities typically results in asset allocations that differ significantly from broadly followed benchmarks.



About Guggenheim Investments

Guggenheim Investments is the global asset management and investment advisory division of Guggenheim Partners, with more than $213 billion[1] in total assets across fixed income, equity, and alternative strategies. We focus on the return and risk needs of insurance companies, corporate and public pension funds, sovereign wealth funds, endowments and foundations, consultants, wealth managers, and high-net-worth investors. Our 295 investment professionals perform rigorous research to understand market trends and identify undervalued opportunities in areas that are often complex and underfollowed. This approach to investment management has enabled us to deliver innovative strategies providing diversification opportunities and attractive long-term results.

About Guggenheim Partners

Guggenheim Partners is a global investment and advisory firm with more than $275 billion[2] in assets under management. Across our three primary businesses of investment management, investment banking, and insurance services, we have a track record of delivering results through innovative solutions. With 2,400+ professionals based in offices around the world, our commitment is to advance the strategic interests of our clients and to deliver long-term results with excellence and integrity. We invite you to learn more about our expertise and values by visiting GuggenheimPartners.com and following us on Twitter at twitter.com/guggenheimptnrs.

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