Alternative Reference Rates Committee: *SOFR Starter Kit Part II (also see Part I and Part III)*

How SOFR Works

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In 2017, the ARRC selected the Secured Overnight Financing Rate (SOFR) as its preferred alternative to U.S. dollar (USD) LIBOR. SOFR is a broad measure of the cost of borrowing cash overnight, collateralized by U.S. Treasury securities in the repurchase agreement (repo) market. *(See SOFR Starter Kit Part I for more on the selection of SOFR.)*

SOFR has several characteristics that make it much safer and less vulnerable to manipulation than LIBOR, including that it:

- Is based on an active underlying market with a diverse set of borrowers and lenders;
- Is based entirely on transactions (not estimates);
- Is produced in compliance with international best practices; and
- Covers multiple market segments, ensuring robust transaction volumes in a wide range of market conditions.

Repo Market Overview

SOFR reflects transactions in the Treasury repo market. Repos are conceptually straightforward. They effectively are collateralized loans, in many ways similar to mortgages in which homeowners borrow money using their homes as collateral. In the Treasury repo market, people borrow money using Treasury debt as collateral.

Reason for Borrowing "Secured" Funds

When a borrower "secures" a loan with collateral, the lender has more options to get repaid. After all, if the borrower fails to repay the loan, the lender is able to take possession of the collateral and sell it to recover the funds lent.

Lenders are therefore typically more willing to make "secured" loans—like repos—than unsecured loans, where the lender does not have the benefit of collateral to guarantee payment.

Repo Market Participants

There are a wide range of financial market participants directly involved in the Treasury repo market, including asset managers, banks, broker-dealers, corporate treasurers, insurance companies, money market funds, pension funds, and securities lending agents.

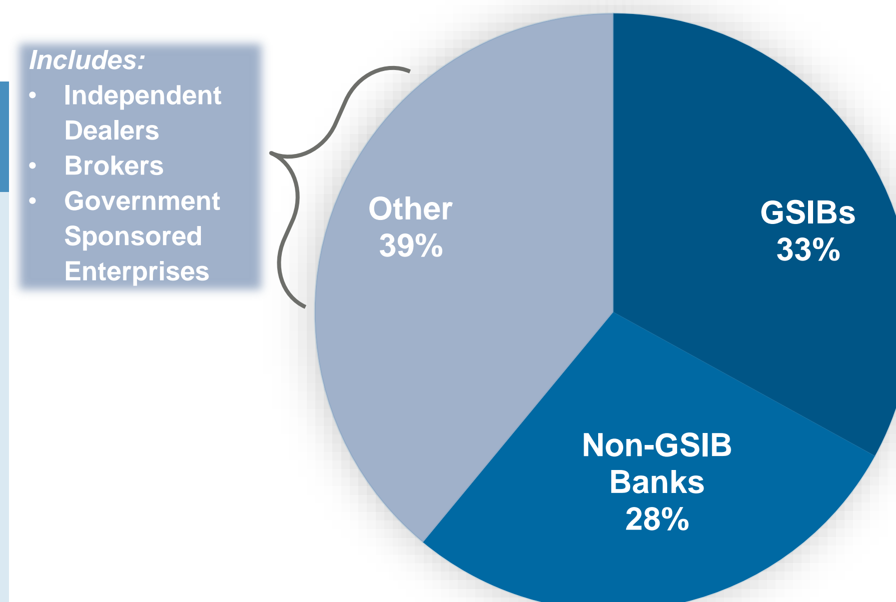
To understand the diversity of institutions involved in the Treasury repo market, consider the segment of the repo market involving the Fixed Income Clearing Corporation (FICC).

- In 2020, FICC has accounted for only 60% of SOFR's roughly $1 trillion in daily transaction volume. That segment alone involves roughly 2,000 institutions through its members and "sponsored memberships" who are able to transact in the Treasury repo market with FICC.

Beyond the diverse entities that regularly transact directly in the repo market, there is a significant number of entities with indirect exposure to the Treasury repo market.

- For example, any investor in the $4.5 trillion money market fund industry likely has exposure to the repo market. Similarly, pension funds—like the California Public Employees' Retirement System, which serves over two million members in the retirement system—typically lend cash in the repo market.

FICC Members Eligible to Transact in the Repo Market



Source: Fixed Income Clearing Corporation; New York Fed calculations

Chart above reflects segmentation of FICC members. FICC members affiliated with 79 different "parent entities," are eligible to transact in the segments of the repo market where FICC serves as central counterparty.

Two-thirds of those parent entities include non-GSIB banks, non-bank affiliated securities dealers, and government sponsored enterprises.

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How SOFR Works – Q&A

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Q: What makes SOFR a robust rate?

A: SOFR is a fully transaction-based rate reflecting roughly $1 trillion of daily transactions in a market with a diverse set of borrowers and lenders. This is much larger than the transaction volumes in any other U.S. money market and dwarfs the volumes underlying LIBOR. It is produced by the New York Fed with a methodology and governance structure consistent with international best practices. These factors make SOFR a reliable representation of conditions in the overnight Treasury repo market – reflecting lending and borrowing activity by a wide array of market participants, including asset managers, banks, broker-dealers, insurance companies, money market funds, pension funds, and securities lenders.

Q: What sort of financial products are expected to reference SOFR?

A: SOFR is suitable for use across a broad range of financial products, including derivatives and many cash products that historically referenced USD LIBOR.

Q: What should market participants do now to transition to SOFR?

A: As ARRC Chair Tom Wipf often says: "The first step to get out of a hole is to stop digging." Consistent with his advice, the ARRC recommends writing new contracts based on SOFR whenever possible, and provides a range of tools to support market participants transitioning to SOFR, including recommended Best Practices and the User's Guide to SOFR. For contracts that still need to reference USD LIBOR, the ARRC recommends incorporating language so that those contracts fall back to SOFR when LIBOR inevitably becomes unusable. *(See SOFR Starter Kit Part III for more ARRC transition tools).*

Q: Of the many rates evaluated, why did the ARRC ultimately select SOFR?

A: Moving the financial system off of LIBOR is a very challenging and costly process, so it was extremely important to the ARRC to avoid the need for another transition in the future. In identifying its recommended alternative to USD LIBOR, the ARRC looked for a rate that met its selection criteria including robustness, governance, ease of use and quality. *(See SOFR Starter Kit Part I for more on the selection of SOFR)*

In addition to meeting those standards, SOFR stood out for having the most underlying transactions. It is also the broadest measure of the market it covers, making it best placed to remain robust even if its underlying market evolves. That market – the Treasury repo market – is very durable, since the ARRC expects it to exist as long as the U.S. Treasury is issuing debt.

With these factors in mind, SOFR is the most resilient option and it is the most likely rate to ensure we will not have to go through this process again.

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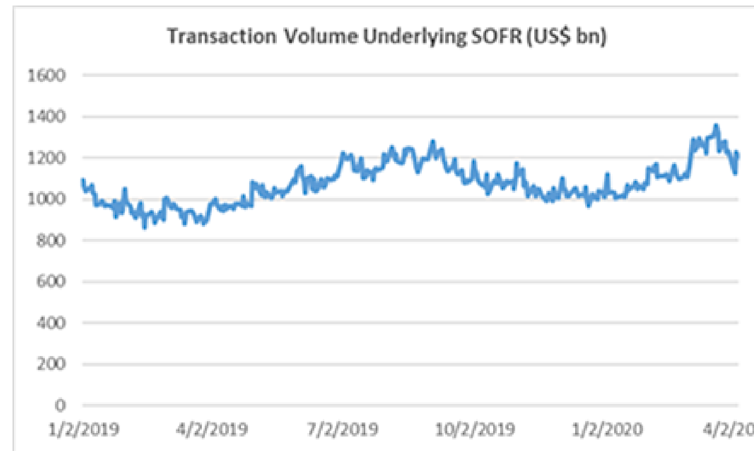
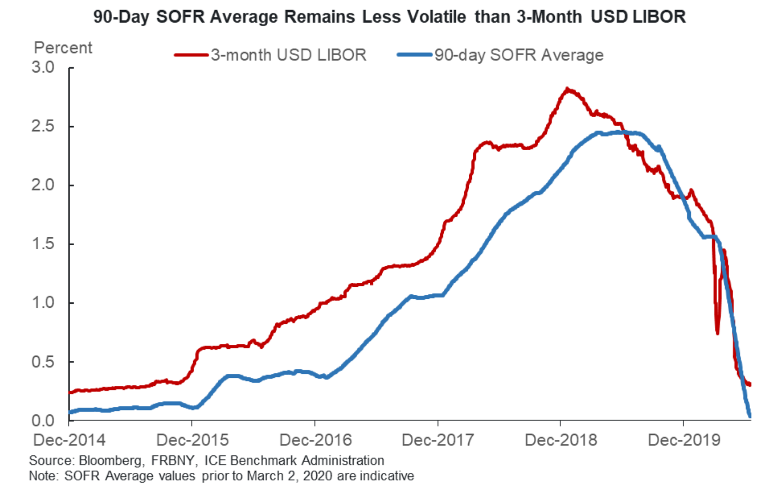
SOFR by the Numbers



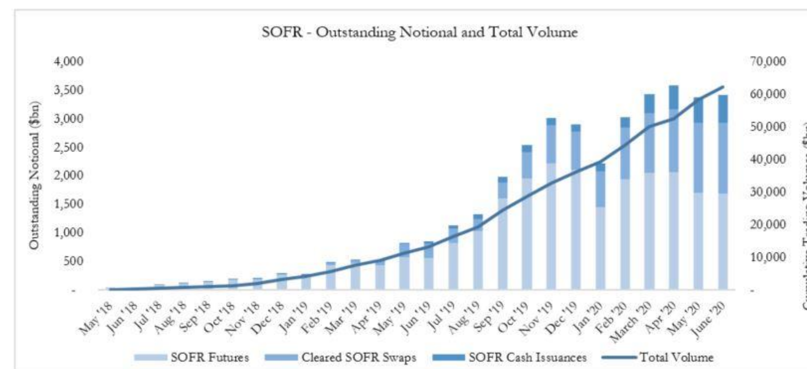
~$1 trillion

The transaction volume underlying SOFR averages around $1 trillion per day. This is far greater than the volumes underlying overnight unsecured rates, and, while not a direct comparison, dwarfs the volumes underlying term unsecured rates—such as the ~$500 million estimated to underlie 3-month USD LIBOR.



300+

The ARRC has 300+ diverse private-market institutions and associations involved on its working groups, supporting the transition to SOFR, its preferred alternative to USD LIBOR.



2021

After December 31, 2021, market participants should assume LIBOR will not continue. The ARRC encourages market participants to continue to adopt SOFR in a range of financial contracts and incorporate SOFR fallback language if they enter new LIBOR-referencing contracts.

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Common Misconceptions of SOFR

Misconception 1: SOFR is more volatile than LIBOR.

SOFR is based entirely on actual transactions. As a robust, well-designed reference rate, it accurately reflects conditions in the market it was created to represent. The ARRC picked SOFR fully aware that transaction-based rates may be volatile if market conditions become volatile. Variability in SOFR is not an issue for its use as an alternative to USD LIBOR since **almost all contracts referencing SOFR will rely on averages of daily rates**. These averages are relatively stable and can be easily referenced in financial contracts, as demonstrated by the growing use of SOFR in futures, swaps and floating-rate debt. In fact, a three-month average of SOFR has been less volatile than three-month USD LIBOR over a range of market conditions.

Misconception 2: Market participants should wait for a forward-looking SOFR term rate before moving to SOFR.

While it is true that a forward-looking SOFR term rate may be appropriate for a limited set of contracts, the growth in SOFR-linked futures, swaps, and floating-rate debt demonstrates the current viability of using SOFR itself in a wide range of financial contracts. A robust forward-looking term rate requires a deep, active SOFR derivatives market, which requires most financial contracts to reference SOFR itself. **It is essential that most financial contracts reference SOFR itself as soon as possible, in order to develop a forward-looking SOFR term rate, and in turn facilitate a smooth transition**. Since March 2020, the New York Fed has been publishing SOFR Averages for several tenors and an index to calculate SOFR rates over custom time periods. These provide a transparent and reliable source that market participants can use to start building new SOFR-linked contracts now. As there is currently not sufficient underlying futures activity to support a robust term rate and no assurance that one will be produced ahead of LIBOR becoming unusable, those who are able to use SOFR should not wait for forward-looking rates in order to transition away from LIBOR.

Misconception 3: SOFR is not appropriate for all market participants.

After more than two years of transparent research and public consultation, the ARRC determined that **SOFR is the most suitable alternative rate for institutions of all sizes and products of all types**. It's a robust rate that can be used in a wide variety of products, including loans, and it's available now. The ARRC supports a vibrant and innovative market with reference rates that are robust, consistent with international best practices, and available for use before the end of 2021. The ARRC's recommendations have always been voluntary and it recognizes that market participants may choose other rates, but any solution must be robust.

Misconception 4: Transitioning to SOFR is less urgent due to the COVID-19 pandemic.

Key financial regulators, including the regulator of LIBOR, have made it clear that market participants should continue to assume they cannot rely on LIBOR being published after the end of 2021. Thus, it is important that market participants continue to prepare for LIBOR becoming unusable after 2021. While the ARRC recognizes that certain near-term, interim steps in the transition may be delayed given the current economic environment, the financial system must continue to transition away from LIBOR – and, ideally, toward SOFR.