SOFR Fix Time Series (2018–2025)

The Secured Overnight Financing Rate (SOFR) Fix time series from 2018 to 2025 exhibits a range of notable patterns. One prominent feature is the sharp spikes during periods of market stress, such as the significant increase observed in March 2020. These spikes often correspond to liquidity shortages or heightened demand for cash in the overnight lending market. Additionally, the series displays gradual upward and downward trends that align with changes in monetary policy, reflecting the Federal Reserve's adjustments to interest rates over time. Distinct jumps are also evident at year-end (December) and quarter-end dates (March, June, September), likely due to banks' balance sheet adjustments for regulatory reporting purposes.

Yearly Seasonality Component

When decomposing the SOFR Fix series into its yearly seasonal component, recurring peaks and troughs emerge at similar times each year. Elevated rates are typically observed at year-end (December), and to a lesser extent at quarter-ends (March, June, September). These patterns suggest that banks may experience temporary liquidity shortages during these periods, leading to higher borrowing costs in the overnight market. Conversely, lower rates are often seen in mid-year months, indicating improved liquidity conditions.

Weekly Seasonality Component

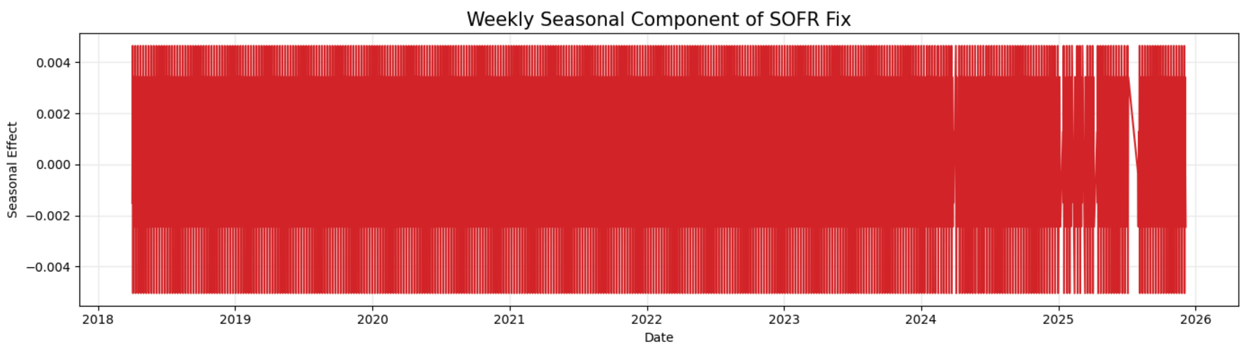
The weekly seasonal component of the SOFR Fix series reveals minor but regular fluctuations within each week. Slight increases at the start or end of the week are often observed, which can be attributed to settlement conventions and liquidity management practices by banks. These weekly patterns, while subtle, reflect the operational rhythms of financial institutions and their impact on short-term borrowing rates.

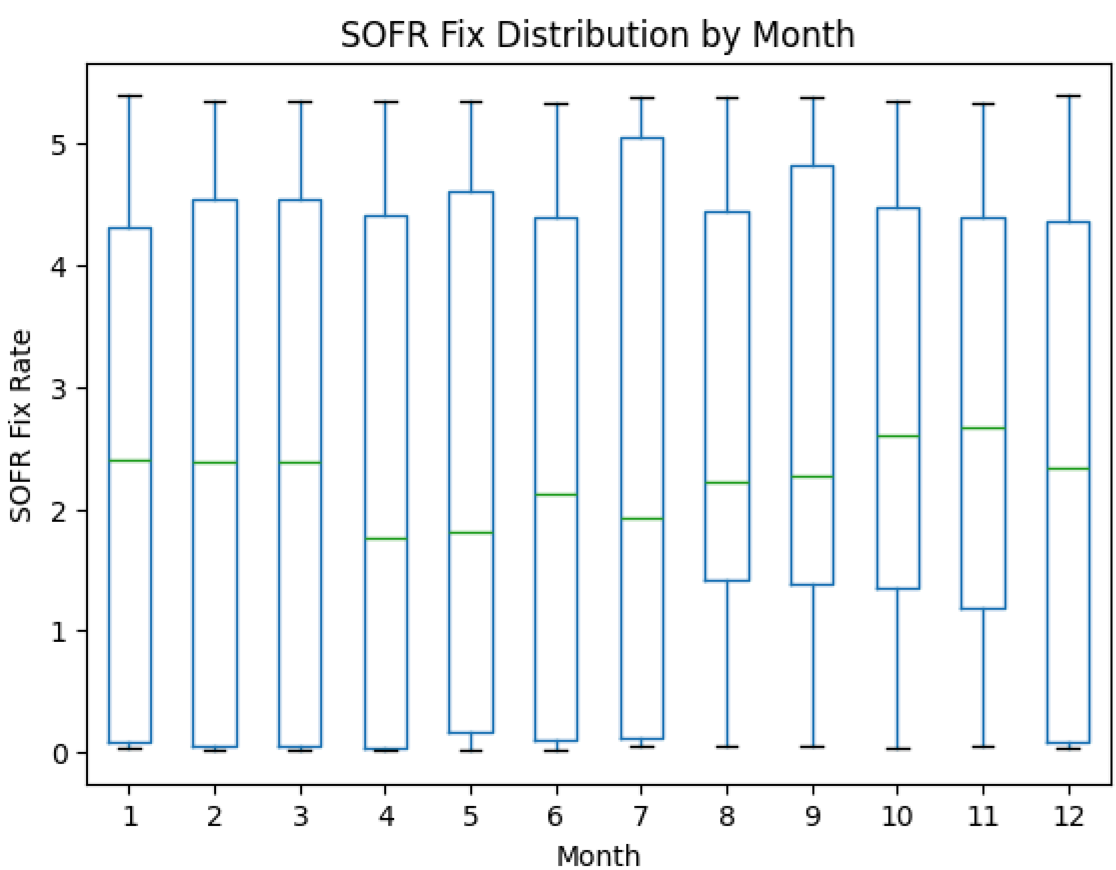
Event Overlay: Quarter-End, Year-End, Tax Day, FOMC

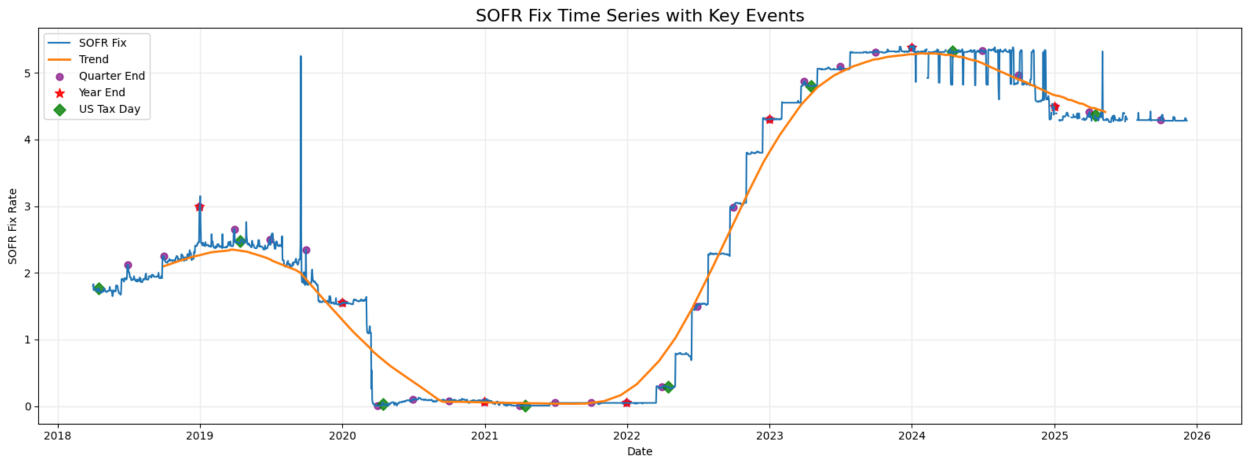
Overlaying key financial calendar events on the SOFR Fix time series highlights their influence on rate movements. Quarter-end and year-end periods are marked by visible rate jumps, as banks adjust their balance sheets for regulatory reporting. The U.S. Tax Day (April 15) occasionally coincides with spikes in the SOFR Fix, likely due to large liquidity outflows for tax payments. Federal Open Market Committee (FOMC) meetings introduce slight volatility, reflecting market anticipation of potential policy changes. These events underscore the complex interplay between regulatory schedules, fiscal obligations, and monetary policy in shaping short-term interest rates.

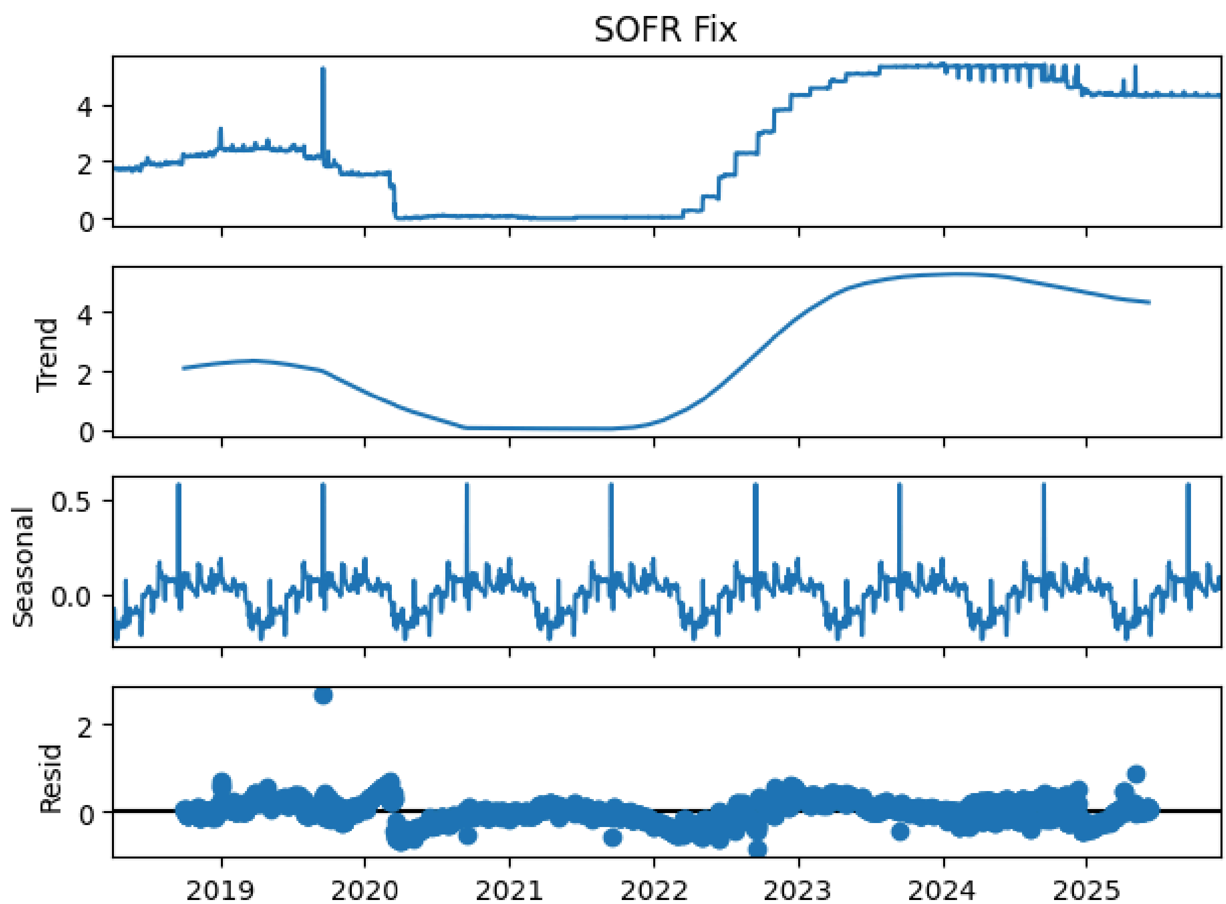
Why Do These Seasonalities Occur?

The observed seasonalities in the SOFR Fix can be attributed to various factors. During quarter-end and year-end periods, regulatory and reporting requirements drive banks to adjust their balance sheets, causing temporary liquidity shortages and resulting in rate spikes. The U.S. Tax Day sees large outflows for tax payments, reducing available cash and sometimes lowering the SOFR Fix. FOMC meetings heighten market anticipation of rate changes or policy shifts, increasing short-term volatility. Additionally, broader economic events such as rate hikes or cuts, regulatory deadlines, and periods of market stress can create visible jumps or dips in the SOFR Fix.



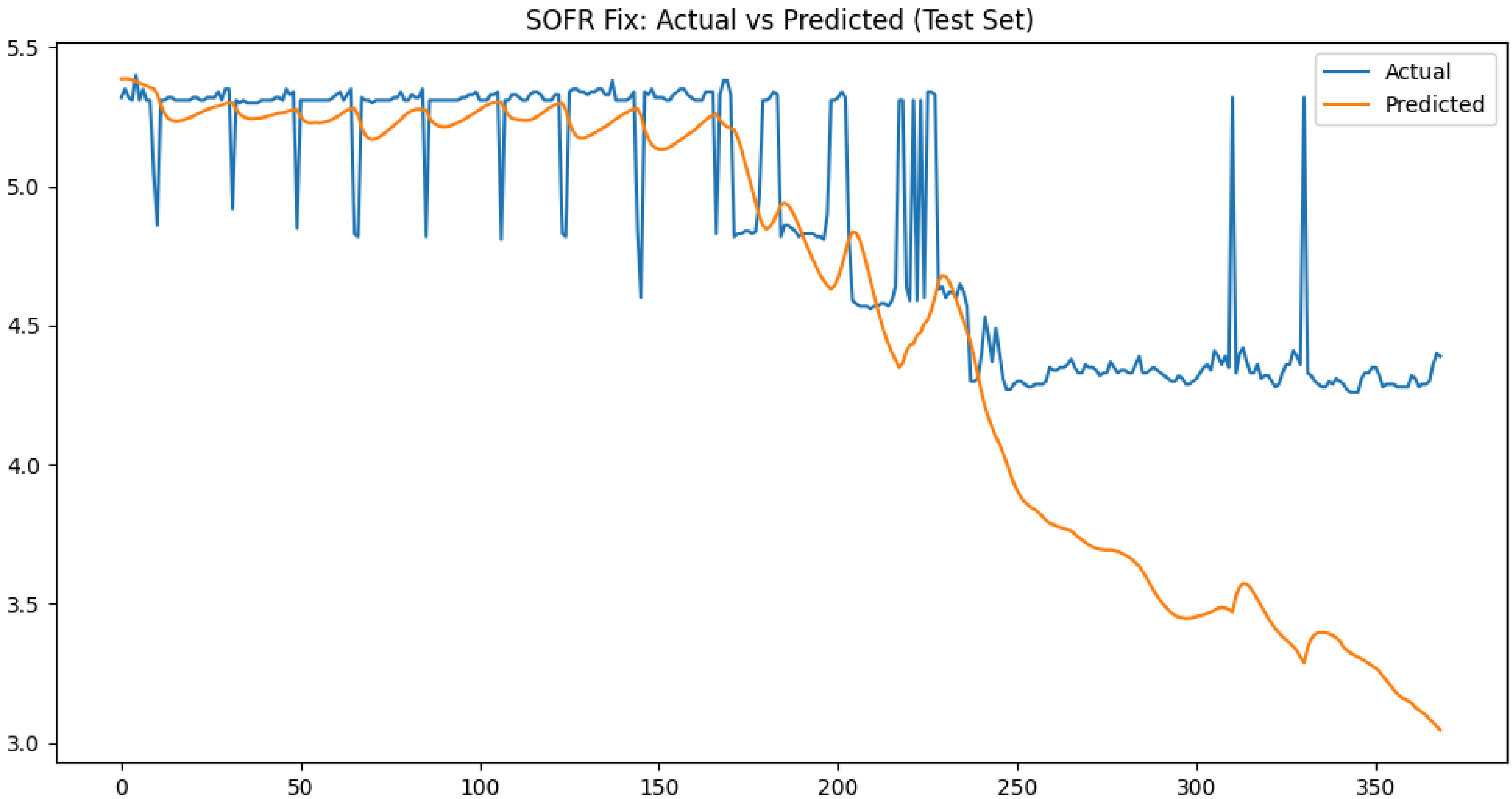






Event Type	Impact on SOFR	Predictability	Reason
Month-End	Spike	High	Balance sheet adjustments
Quarter-End/Year-End	Larger spike	High	Regulatory reporting, liquidity
FOMC Meeting	Jump	High	Policy rate change
Tax/Settlement Days	Spike	High	Cash outflows/inflows

SOFR FORECAST



Feature importances (%):

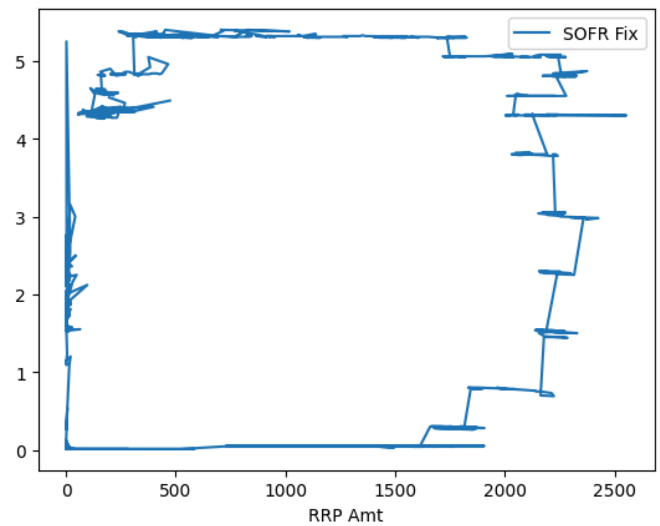
SOFR Volume: 42.13%

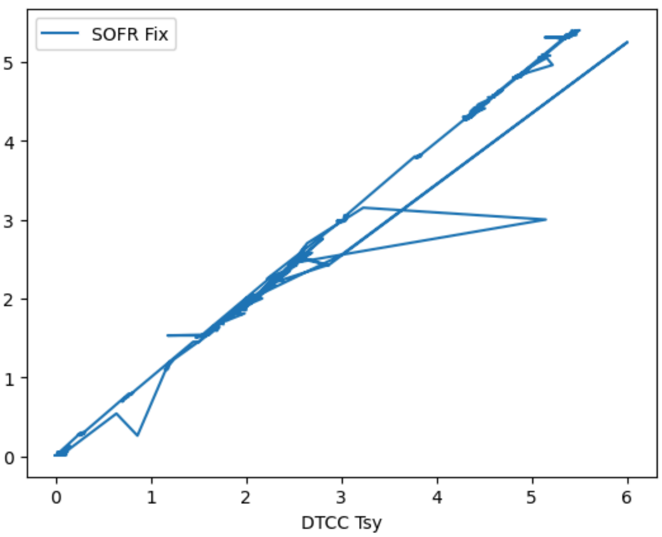
DTCC Tsy: 30.68%

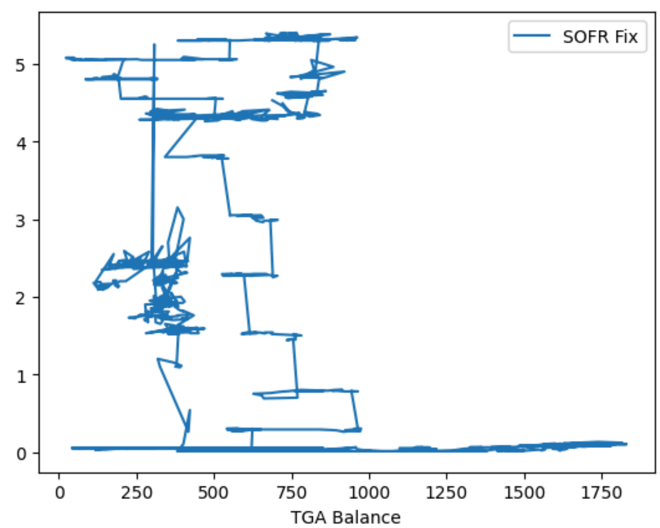
Bloomberg GC: 22.71%

RRP Amt: 6.13%

TGA Balance: -1.64%


SOFR Fix
0
1
2
3
4
5
0
500
1000
1500
2000
2500
RRP Amt


SOFR Fix
0
1
2
3
4
5
0
1
2
3
4
5
6
DTCC Tsy


SOFR Fix
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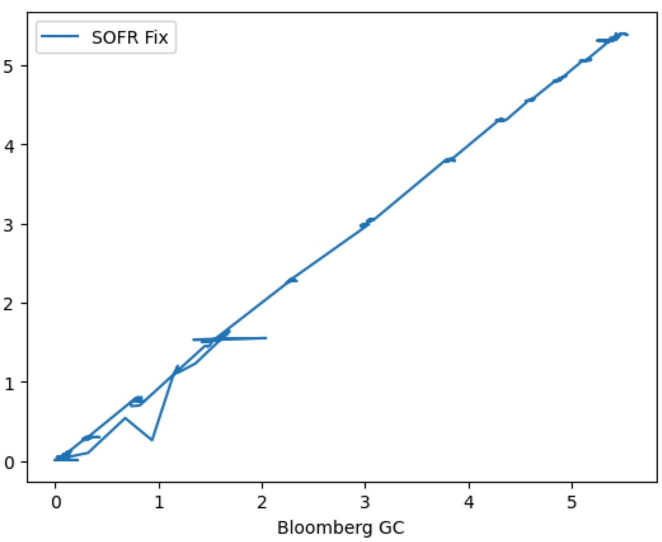
1
2
3
4
5
0
250
500
750
1000
1250
1500
1750
TGA Balance


SOFR Fix
0
1
2
3
4
5
0
1
2
3
4
5
Bloomberg GC

TERMINOLOGIES:

1. SOFR Fix

- **Full Form:** Secured Overnight Financing Rate Fix
- **Description:** The SOFR Fix is a benchmark interest rate representing the cost of borrowing cash overnight, secured by U.S. Treasury securities. It is calculated as a volume-weighted median of transaction-level data from the Treasury repurchase (repo) market.

2. SOFR Volume

- **Full Form:** SOFR Trading Volume
- **Description:** This refers to the total volume of transactions conducted at the SOFR rate within a given period. It provides insight into the liquidity and activity in the overnight Treasury repo market.

3. DTCC Tsy

- **Full Form:** Depository Trust & Clearing Corporation Treasury
- **Description:** The DTCC is a financial services company that provides clearing and settlement services for financial markets. "Tsy" refers to U.S. Treasury securities. The term likely pertains to the clearing and settlement of Treasury securities transactions facilitated by the DTCC.

4. Bloomberg GC

- **Full Form:** Bloomberg General Collateral
- **Description:** "GC" stands for General Collateral, which refers to high-quality, low-risk securities, typically U.S. Treasury securities, used in repurchase agreements. Bloomberg provides data and analytics related to these instruments.

5. RRP Amt

- **Full Form:** Reverse Repurchase Agreement Amount

- **Description:** This represents the total value of reverse repurchase agreements conducted by the Federal Reserve. In an RRP, the Fed sells securities with an agreement to repurchase them later, serving as a tool for managing short-term interest rates and liquidity in the financial system.

6. TGA Balance

- **Full Form:** Treasury General Account Balance

- **Description:** The TGA is the U.S. government's primary operating account held at the Federal Reserve. The TGA Balance indicates the amount of funds available in this account, reflecting the government's cash position and influencing monetary policy decisions.