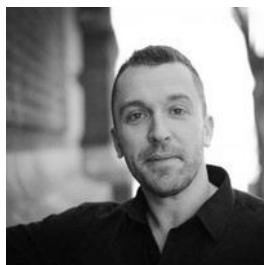**McCRACKEN UNIVERSITY**

WEBINAR SERIES

How to use STRATEGY for the SOFR Transition

January, 2020

Meet the team.

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Today you will learn:

1. **The latest update on the 4 interest methodologies that McCracken and customers will need to prepare for**
2. **How these scenarios will impact STRATEGY**
3. **Actions STRATEGY users need to take in order to be set up for success for the fast-approaching LIBOR to SOFR transition**

Before we begin, a few reminders.

Submit your questions anytime.

This webinar will be recorded.

Complete the survey.

Our agenda.

- ✓ What is SOFR?

- ✓ A Look at the 4 SOFR Interest Methodologies to Replace LIBOR

- ✓ STRATEGY and SOFR

- ✓ Actions STRATEGY Users Should Take to Prepare for SOFR

- ✓ Additional Considerations

McCracken Involvement

- We have been participating with the ARRC (Alternative Reference Rates Committee) meetings
  - o The ARRC is a group of private-market participants convened by the Federal Reserve Board and the New York Fed to help ensure a successful transition form LIBOR to a more robust reference rate
  - o Recommended SOFR
- Part of the periodic calls
- Participating in the vendor workshops with the LSTA (Loan Syndications and Trading Association)

What is SOFR?

- Secured Overnight Financing Rate
  - Was selected as the recommended replacement to LIBOR in 2017
    - There is a one day lag in the published date vs effective date
      - Example – The SOFR Index effective Monday, November 30th , 2020 will be published at 8:00 am on Tuesday, December 1st , 2020.
    - Published by the Federal Reserve Bank of New York
      - https://apps.newyorkfed.org/markets/autorates/SOFR

Secured Overnight Financing Rate

DATE	RATE (PERCENT)	PERCENTILES				VOLUME (US$BILLIONS)
		1ST (PERCENT)	25TH (PERCENT)	75TH (PERCENT)	99TH (PERCENT)	
2019-12-30	1.54	1.47	1.52	1.60	1.67	1,036
2019-12-27	1.53	1.47	1.50	1.58	1.64	1,038
2019-12-26	1.52	1.47	1.50	1.57	1.64	1,000
2019-12-24	1.52	1.45	1.50	1.57	1.64	1,006
2019-12-23	1.52	1.48	1.50	1.57	1.64	1,027
2019-12-20	1.53	1.47	1.49	1.57	1.64	967
2019-12-19	1.53	1.47	1.50	1.58	1.65	988

SECTION 2

A Look at the 4 SOFR Interest Methodologies to Replace LIBOR

A Look at the 4 SOFR Interest Methodologies

- The 4 recommended methodologies to calculate interest
    - Forward Looking SOFR Term Rate
    - SOFR Compounded in Advance
    - Daily Simple Average SOFR in Arrears
    - SOFR Compounded in Arrears

- Spread Adjustment
    - Used for existing loans transitioning from LIBOR to SOFR indices

Forward Looking SOFR Term Rate

- Forward Looking SOFR Term Rate
    - Referencing a new rate
    - Would allow for the rate to be known at the start of the period
    - Does not exist today/Looking to have by the end of 2021
    - Strategy can handle once rate is published

    - Formula
        - Balance * Rate /360 * Number of Days

SOFR Compounded in Advance

- SOFR Compounded in Advance
  - Referencing a new rate
  - Would allow for the rate to be known at the start of the period
  - Does not exist today/proposing to publish three compounded averages of the SOFR with options of 30-, 90-, and 180-calendar days in the first half of 2020
  - Strategy can handle once rate is published

  - Formula
    - Balance * Rate /360 * Number of Days

Daily Simple Average SOFR in Arrears

- Daily Simple Average SOFR in Arrears
  - Referencing new rate
  - Require the interest rate to be determined at the end of the accrual period
  - STRATEGY handles this today

  - Formula
    - Effective Rate
      - # of days * SOFR Rate/360
    - Effective Rate * Principal Balance

SOFR Compounded in Arrears

- SOFR Compounded in Arrears
  - Interest rate to be determined at the end of the accrual period
  - Various ways to calculate Compounding in Arrears
    - Compounding the Rate
    - Compounding the Balance
  - STRATEGY currently has compounding functionality but changes are required to support daily compounding. Waiting on a decision from ARRC on the calculation.

  - This method will require contractual, operational and systems changes

SOFR Compounded in Arrears

One of the Proposed Interest in Arrears Methods

- SOFR Compounded in Arrears
  - Compounding the Rate
    - Original math that is published in the "A user's Guide to SOFR"
    - Assumes the Principal Is constant

  - Formula
    - Effective Rate
      - # of days * SOFR Rate/360
    - Compounded Rate
      - ((1 + the Effective Rate) * (1 + prior day Compounded Rate)-1) * Principal Balance

SOFR Compounded in Arrears

One of the Proposed Interest in Arrears Methods

- SOFR Compounded in Arrear
  - Compounding the Balance
    - Does not assume Principal will be constant

  - Formula
    - Effective Rate
      - # of days * SOFR Rate/360
    - Compounded Balance
      - Principal Balance * Effective Rate + (1 + Effective Rate) * Prior days Total Interest

Spread Adjustment

- Spread Adjustment
    - Used when transitioning existing LIBOR loans to SOFR
    - A spread adjustment is meant to minimize the difference between LIBOR and SOFR
    - ARRC needs to perform its own analysis to determine its recommendations for what spread adjustment approach would be most appropriate for use in cash products
    - There had been talk about it being publish by Bloomberg

Summary

- Interest Methods Supported
  - Forward Looking SOFR Term Rate (once rate is published in 2021)
  - SOFR Compounded in Advance (once rate is published in 2020)
  - Daily Simple Average SOFR in Arrears
- SOFR Compounded in Arrears coming 1st quarter of this year

SECTION 3

STRATEGY and SOFR

PRELIMINARY ACTIVITIES

- Create New SOFR values Associated with Adjustable Loans
  - Used to delineate the types of SOFR products and the SOFR index values
    - ARM Type Code or Adjustable Loan Desc.
    - Adjustable Loan Indexes
- Review Formula Methods
  - Option P used for *spread adjustment*

SOFR ARM TYPE CODE

- STRATEGY System Information Table ID 10

  o Customer Defined

  o 2 Position Identifier

- Easily identify the different SOFR products in portfolio

SOFR Indices

- STRATEGY System Information Table ID I2
  - Customer Defined
  - 2 Position Identifier

Adjustable Method

- Method A – Standard
  - Margin is added to Index
  - Can be positive or negative
- Method P – 2 Operations
  - Index
  - Allows for 2 Margins and 2 Operators
  - Will accommodate the Spread Adjustment

Adjustable Methods

New Loans

- Use Method A
  - Forward Looking SOFR Term Rate
  - Daily Simple Avg SOFR in Arrears
  - Works with SOFR Compounded in Advance
  - *Proposed SOFR Compounded in Arrears*

Transitioning Loans

- Use Method P
  - Forward Looking SOFR Term Rate
  - Daily Simple Avg SOFR in Arrears
  - Works with SOFR Compounded in Advance
  - *Proposed SOFR Compounded in Arrears*

Adjustable Loan Record

- Existing loans will need to be maintained to update the Adjustable Loan Desc. to the new SOFR value

- Update the SOFR Index value on the Adjustable Loan Info screen

- Lookback days – only need to change if the number of days are different from the existing LIBOR loan terms

  o Use Business Days for review

- Rate Change Date – only needs to change if the date is different than the existing Rate Change Date

  o STRATEGY will recalculate the Review Date based on the Lookback Days

Adjustable Loan Record

- If a Spread Adjustment is needed
  - Adjustable Method = P (Two Ops)
    - Math Operator 1/Margin 1 % must be populated
    - Math Operator 2/ Margin 2 % must be populated for the spread adjustment

Loan Administration Master File

- Existing Loans – If Daily Simple Avg SOFR in Arrears with Principal
  - If Payment Type currently is a 'P' on STRATEGY must change to 'G'
    - Allows for Negative Amortization
    - Neg Am % Allowed

SECTION 4

Actions STRATEGY Users Should Take to Prepare for SOFR

Actions Strategy Users Should Take to Prepare for SOFR

- Need to determine your LIBOR loan population
- Understand the fallback language for each of these loans
  - What will the replacement for LIBOR be
    - If SOFR what Interest Methodology will you use
- What is the impact if the fallbacks have to be implemented
  - Will you need to amend contracts
  - Changes into the Strategy system
- Notifications to borrowers

SECTION 5

Additional Considerations

Additional Considerations

- Changes that need to be made in Strategy
  - What approach will you take
  - McCracken is looking to develop tools to assist with the changes
    - Mapping Tool
    - Navigator
- Billing
  - The timing of the statements for Compounding in Arrears or Daily Simple SOFR
  - Strategy has several options you can use today
    - Hold the interest adjustment after the bill has been printed and bill on the next statement
    - Due Date Billing
      - Bill in the Lookback period
      - At month end
    - Ability to e-mail billing statements when using Write Track

Additional Considerations

- Backdating
    - Strategy has backdating functionality today called Global Rate Change
        - Globally
        - Individual
- Familiarize yourself with the current functionality that the system has today
    - Daily review frequency
    - Adjustable Rate Method - 2 Operations (P)

We are looking for input from you the customers on these items. We might need to get a separate working group together

Also Being Discussed

- A SOFR Index for custom periods
  - Looking to publish the index in the first half of 2020
  - The index is a compounding sequence which allows you to calculate compounding SOFR average over custom periods
  - This one hasn't been proven in our vendor meetings

  - Formula
    - (End Date of SOFR Index/Beginning Date of SOFR Index) * (360/Number of Days)

Questions?

Thank you for attending our webinar. Don't forget to:

Complete the survey.

Share the recording with your colleagues.

Attend our monthly webinars.

Contact McCracken if you'd like to learn more.