abrigo™

Balance Sheet Management: Navigating Interest Rate Risk

California Community Banks

Today’s Presenter

Dave Koch

Director, Sales and Professional Services

Abrigo

Dave.Koch@Abrigo.com

608-661-4217

What are we all thinking about rates and the economy?

Managing Today's ALM Risks

- Interest Rate Risk
  - Asset sensitive banks exposed to Federal Reserve easing
  - Earnings at risk exposures may be elevated from refi risk of higher rate loans over past 2 years
  - Bond portfolio values are still underwater and slow to recover
- Liquidity Risk
  - Deposit attrition seems to have subsided
  - Still minimal deposit growth overall
  - Higher levels of brokered CDs and borrowings in many community FI's

Current Environment Overview

- Fed rate policy and inflation
- Deposit pressure and loan demand
- California-specific economic themes

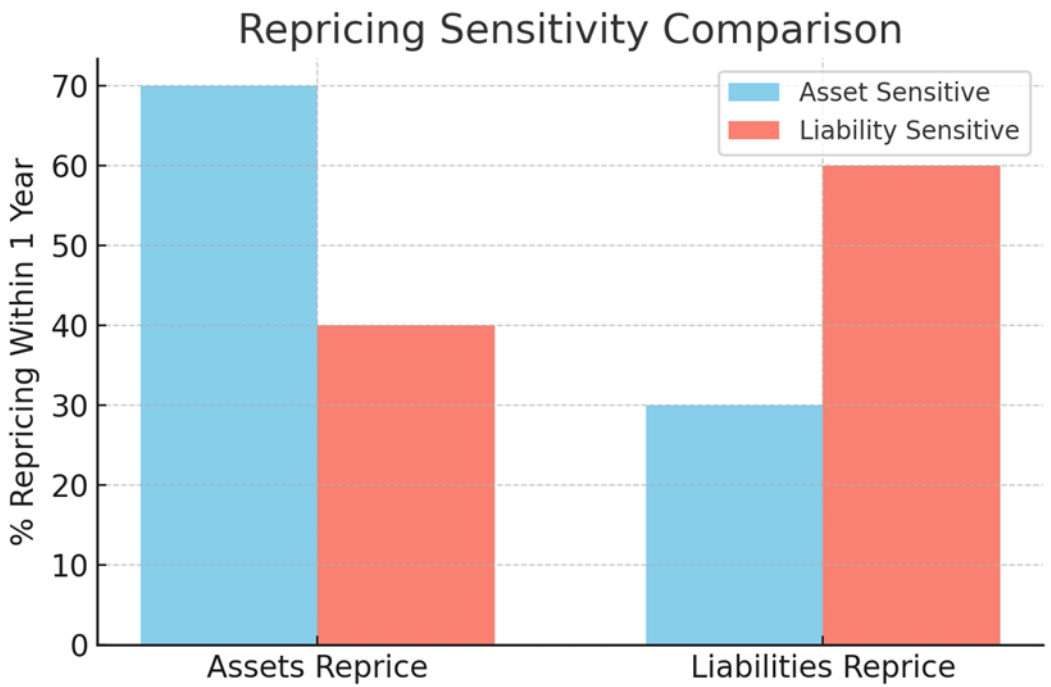
Measuring Interest Rate Risk

NET INTEREST INCOME (NII) SIMULATION

ECONOMIC VALUE OF EQUITY (EVE)

STATIC VS. DYNAMIC MODELING

Asset Sensitive vs. Liability Sensitive



- Asset Sensitive: benefit from rising rates
- Liability Sensitive: benefit from falling rates
- Mismatch creates risk in volatile rate environments

Risks of Being Asset or Liability Sensitive

Asset Sensitive

- NII compression in falling rates
- Prepayment and reinvestment risk
- Optionality on loans and investments

Liability Sensitive

- Funding cost pressures in rising rates
- Deposit repricing risk
- Margin compression from legacy fixed-rate assets

Most Important Risk Assumptions?

Understanding Non-Maturity Deposit Stability

- Behavioral assumptions matter
- Balance volatility and rate sensitivity
- Segmentation enhances model accuracy

Client Methodology Comparison-MMDA

Empirical Method
(through 9/30/2024)

- MMDA Decay Rates
  - Aggregate 19.75%
- Estimated Surge Levels
  - Core 67.2%
  - Surge 32.8%

- MMDA Decay Rates
  - **Aggregate 30.7%**
  - Core Balances 27.8%
  - Surge Balances 33.2%
- MMDA Core/Surge Levels
  - Core 45.9%
  - Surge 54.1%

Non-Maturity Deposit Modeling

Assessing Rate Sensitivity & Deposit Beta

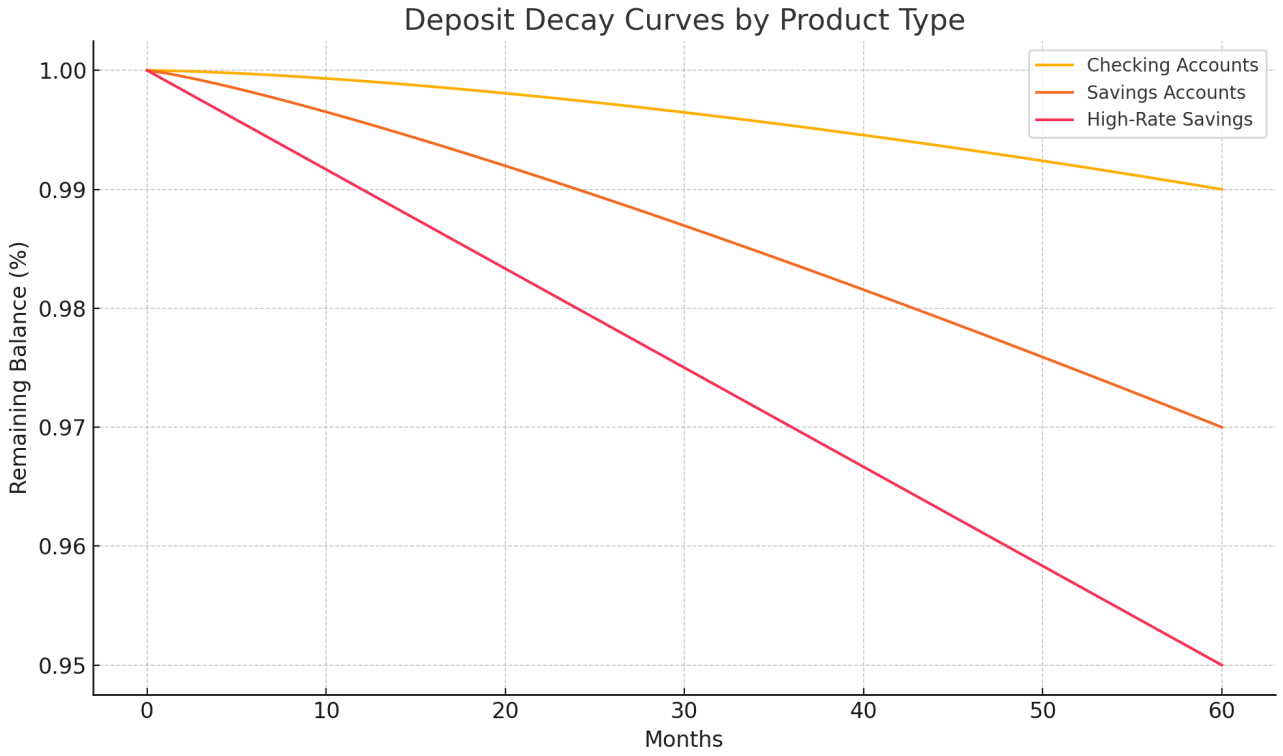
Challenge:
Banks often apply uniform beta assumptions (e.g., 30% beta for savings) across all deposit types and customers, missing behavioral nuance.

AI Enhancement:

- AI models can **learn deposit repricing behavior** across different rate environments, distinguishing between low-beta and high-beta customer segments.
- **Elasticity models** trained on historical rate change events can estimate marginal betas at account or product levels.

Benefit:
Data-driven beta estimates improve FTP modeling, net interest margin projections, and rate-risk positioning.

Impact of Deposit Decay Modeling



- This chart shows how deposits in different product types decay over time. AI enhances this by identifying nuanced behavioral segments and updating decay assumptions in real-time as customer behavior changes.

Non-Maturity Deposit Decay

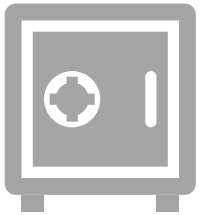
Comparing decay by vintage and age demographic

Greater analysis of depositor age and account age helps predict balance stability

Segment	Annual Decay
MMDA - CONSUMER - Boomers (1946-1964)	26.5051%
MMDA - CONSUMER - Gen X (1965-1980)	24.1164%
MMDA - CONSUMER - Gen Z (1997-2021)	59.8061%
MMDA - CONSUMER - Millennials (1981-1996)	18.8437%

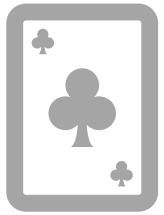
Segment	Annual Decay
MMDA - CONSUMER - Vintage Ending 2021-12-31	29.8509%
MMDA - CONSUMER - Vintage Ending 2022-12-31	46.6757%
MMDA - CONSUMER - Vintage Ending 2023-12-31	29.5742%
MMDA - CONSUMER - Vintage Ending 2024-12-31	-50.4177%

Building a Deposit Scoring Model



Identify 'sticky' vs. rate-sensitive deposits

Inputs: account age, activity, balances



Use in modeling, pricing, and marketing

Funding Stability Index (FSI)

A new concept for measuring funding risks

- The FSI helps community banks and credit unions:
  - Understand how resilient their deposit base is.
  - Quantify the likelihood of deposit runoff or funding stress.
  - Compare the stability of different customer segments, products, or funding channels.
- The FSI typically blends **behavioral**, **structural**, and **market** factors. While there's no universal formula

Sample FSI Scorecard

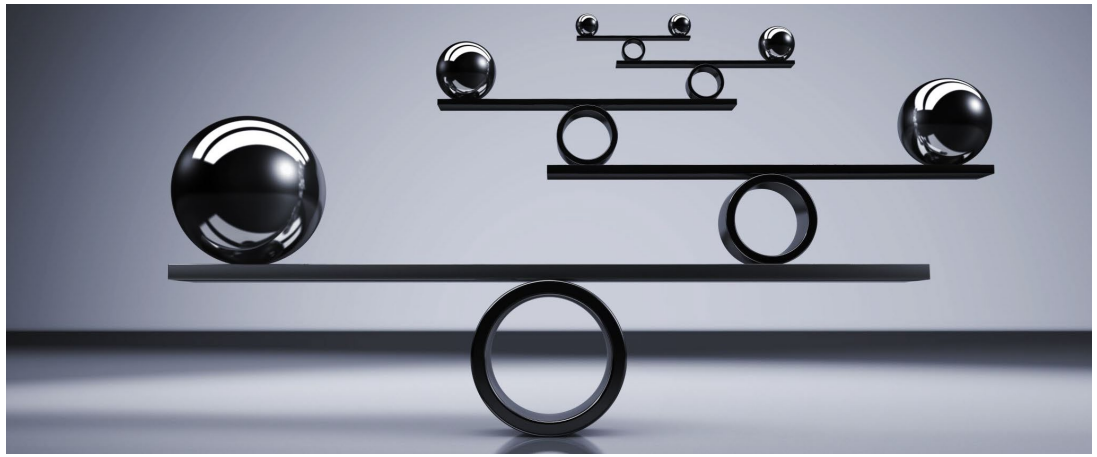
Component	Score	Weight (%)	Weighted Score
Account Longevity	70	30	21.0
Balance Volatility	75	20	15.0
Rate Sensitivity	50	15	7.5
Deposit Concentration	100	15	15.0
Product Type Risk	75	10	7.5
TOTAL	100	10	76.0

Common FSI Components

- Account Longevity – assigns higher value to longer relationships
- Balance Volatility – Looks at historical volatility of the balances and assigns scores to lower volatility accounts
- Rate Sensitivity – How responsive are the balances to changes in market rates. Applied beta analysis
- Deposit Concentration – What % of the total deposit level are held by the depositor/customer
- Product type – Assigns a risk factor that assumed inherent runoff risk of different products
- Transaction activity (retail deposits) – Assigns higher value to more recurring transactions
- Operational Use/Transactions (commercial deposits) – How much of the balance is tied to operations/payroll/lending relationship
- Cross-product score – Bonus points for more active deposit or other relationships

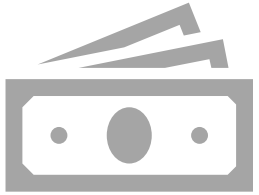
Comparison of Estimated Deposit Durations

Model	Initial Balance	Balance at 6 Months	Balance at 12 Months	Estimated Duration (Months)
Traditional	100	80	60	9.5
AI Model	100	65	50	7.2
Older Depositors	100	55	45	6.1



Common ALM Strategies

Extend or shorten duration



Hedge using interest rate derivatives

Align loan and funding strategies

Balance Sheet Strategies

Discussion of current strategies

- Pay fixed swaps
- Loan pricing with deposit relationships
- Wholesale funding opportunities

Pay-Fixed Swap

Evolving Yield Curve Environment

Swap Type: 2 or 3-year Pay-Fixed, Receive-Floating

- Current Conditions:
  - Fed Funds: 4.25%
  - 2Y Treasury: 3.85%
  - 10Y Treasury: 4.50%
- Curve Shape:
  - -50 bps inversion (3M–2Y)
  - +65 bps slope (2Y–10Y)
- Market Expectation:
  - Fed to cut 50 bps in 6 months
  - Another 50–75 bps in the following 12 months

Pay Fixed Swap

Cash Flow & Valuation Trajectory by Scenario

Scenario	Short-Term Carry	Long-Term MTM	Driver
Base Case (-100bps in 12mo)	Positive (Yr 1)	Negative (Yr 2–3)	Floating falls below fixed
Aggressive Easing (-125bps fast)	Briefly positive	Larger MTM loss	Curve steepens faster
Fed Delays Cuts (Slow easing)	Strong carry	Neutral/slight gain	Floating stays elevated
Fed Holds / Hikes	Strong positive	Valuation gain	Swap becomes in-the-money

Pay Fixed Swap

Hedge Utility and Risk Management Insights

Pros:

- Protects against unexpected rate hikes
- Temporary positive carry if cuts are delayed
- Simple, liquid hedge instrument

Risks:

- Fed cuts → falling floating leg → swap underperforms
- MTM losses impact capital/earnings
- Negative carry after ~1 year (base case)
- Mismatch risk if not tied to floating liabilities

Key Insight:
In a falling rate environment with a steepening curve, short-tenor pay-fixed swaps will likely lose value over time unless offsetting floating exposures exist.

Loan Pricing Strategies

Risk-based pricing with deposit cost integration

Tactical Implementation:

- Use **marginal cost of funds transfer pricing (FTP)** models to calculate the blended cost of each loan's funding source (e.g., 40% core deposits at 1.5%, 60% CDs at 4.25%).
- Include a **capital charge or liquidity premium** in pricing.
- Ensure rates vary meaningfully based on **loan term**, **duration**, and **rate type (fixed vs. variable)**.

California-Specific Consideration:

- With **competitive deposit markets in coastal metros** and **agriculture-linked seasonality inland**, pricing must reflect **regional differences in funding pressure**.

Loan Pricing Strategies

Tiered floating rate pricing with collars or minimum rate floors

Tactical Implementation:

- Apply a **hard floor** (e.g., 6.00%) or a **collar range** (e.g., 6.00%–8.50%) on Prime-based or SOFR-based loans.
- Offer a **credit discount (spread reduction)**
  - or higher relationship clients if needed,
  - don’t drop below the floor.
- Use **interest rate swaps or caps** to hedge the volatility for longer-term deals.

California-Specific Consideration:

- Many small and mid-sized businesses in CA are **interest rate sensitive**, especially in **hospitality, agri-business, and tech-adjacent service sectors**.
- A floating rate loan with rate protection creates flexibility without overcommitting to current elevated rates.

Loan Pricing Strategies

Bundled relationship pricing

In either strategy, tie loan pricing to deposit growth, treasury services, or cross-sell success. This improves not only **margin per relationship** but also **deposit stickiness**, which is crucial in the current environment.

CALIFORNIA-SPECIFIC CONSIDERATION:
Many small and mid-sized businesses in CA are **interest rate sensitive**, especially in **hospitality, agri-business, and tech-adjacent service sectors**.
A floating rate loan with rate protection creates flexibility without overcommitting to current elevated rates.

Funding Strategies

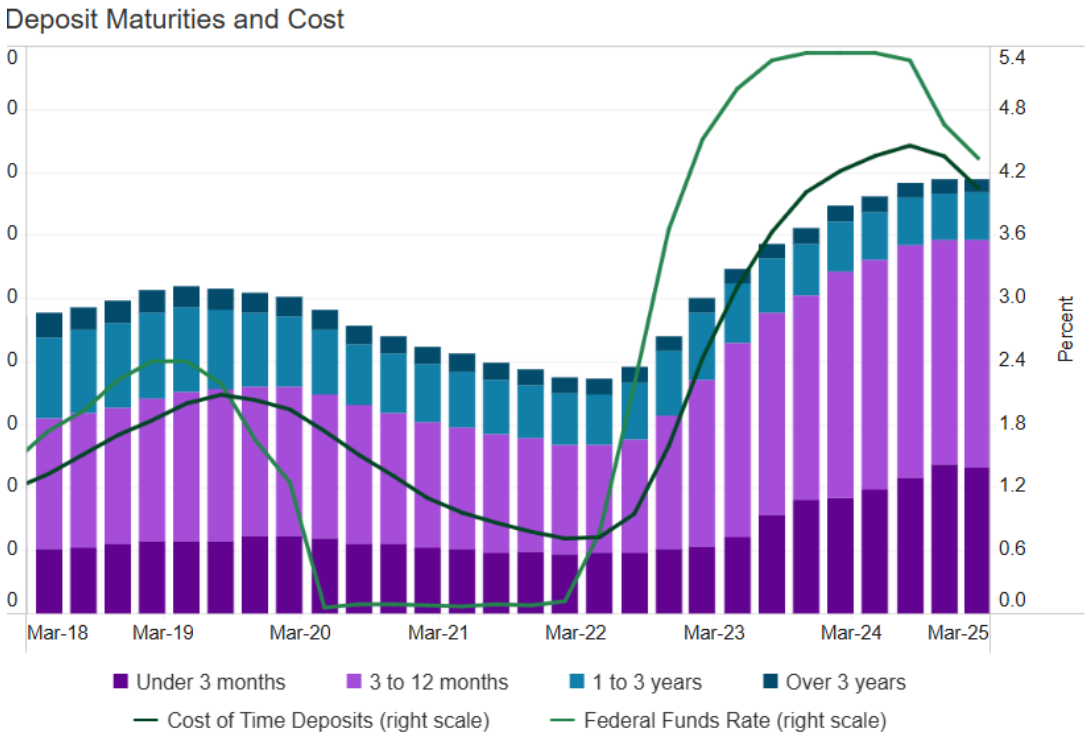
Inverted Yield Curve and Funding Strategy Dilemma

- The yield curve remains **inverted**, meaning **short-term rates (e.g., 1–6 months)** are **higher than intermediate or long-term rates (e.g., 3–5 years)**.
- Community banks face a **trade-off** between:
  - **Short-term funding** (e.g., overnight lines, 3–6 month advances, special-rate CDs)
  - **Longer-term funding** (e.g., 2–5 year FHLB advances)
- Customer deposits require 4.5% + to attract new funds
  - Minimal amount of new depositor relationships
  - Internal cannibalization still possible
- Falling rate “betas” likely to be lower and slower…

CALIFORNIA-SPECIFIC CONSIDERATION:
Many small and mid-sized businesses in CA are **interest rate sensitive**, especially in **hospitality, agri-business, and tech-adjacent service sectors**.
A floating rate loan with rate protection creates flexibility without overcommitting to current elevated rates.

Funding & Time Deposit

FRB- Kansas City June 3rd article

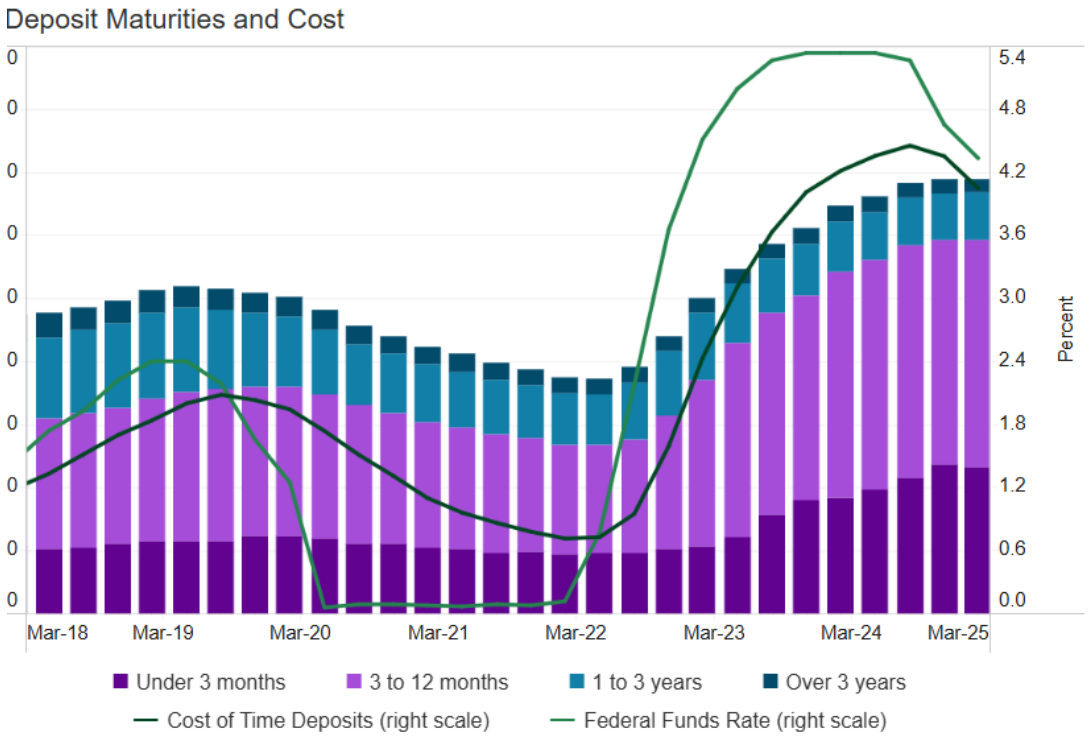


Reports of Condition and Income, Board of Governors of the Federal Reserve System

- Time deposits have grown substantially at community banking organizations[(CBOs) over the past two years, increasing $267 billion from 2022 to 2024 due to organic growth and deposits shifting from non-maturity deposits to time deposits.
- Time deposits increased from 18% of total deposits at year-end 2022 to 27% in 1Q 2025.

Funding & Time Deposit

FRB- Kansas City June 3rd article



Reports of Condition and Income, Board of Governors of the Federal Reserve System

- Growth has been almost exclusively in time deposits maturing in less than a year. Growth in time deposits at CBOs has lagged movements in interest rates.
- The cost of time deposits peaked in 3Q 2024 at 4.45 percent, corresponding to the beginning of interest rate cuts by the FOMC, and has since declined by just over 40 basis points through 1Q 2025.

Funding Strategies

Why Longer-Term FHLB Advances Make Sense Now

1. Locking in Lower Term Rates in an Inverted Curve
   - Longer-term FHLB rates (e.g., 3-year at 3.70%) may be below short-term CD specials or 6-month advances (e.g., 5.00%+).
   - Despite the usual term premium, the inversion flips this, making term funding cheaper.
2. Improves Rate Certainty and ALM Positioning
   - Long-term advances stabilize your cost of funds, making it easier to:
     - Price loans more predictably
     - Simulate Net Interest Income (NII)
     - Reduce earnings volatility in rate cuts
   - Helps shift ALM posture toward asset-sensitive neutralization.

CALIFORNIA-SPECIFIC CONSIDERATION:

MANY SMALL AND MID-SIZED BUSINESSES IN CA ARE INTEREST RATE SENSITIVE, ESPECIALLY IN HOSPITALITY, AGRI-BUSINESS, AND TECH-ADJACENT SERVICE SECTORS.

A FLOATING RATE LOAN WITH RATE PROTECTION CREATES FLEXIBILITY WITHOUT OVERCOMMITTING TO CURRENT ELEVATED RATES.

Funding Strategies

Why Longer-Term FHLB Advances Make Sense Now

3. Reduces Repricing Risk and Operational Drag
   - Avoids frequent rollover risk associated with short-term borrowings.
   - Shields from future curve normalization,
     - where short rates may fall and then re-rise unpredictably.
   - Reduces reliance on rate-sensitive or promotional deposits, which:
     - Attract hot money
     - Increase servicing burden
     - Erode deposit franchise value

CALIFORNIA-SPECIFIC CONSIDERATION:

MANY SMALL AND MID-SIZED BUSINESSES IN CA ARE INTEREST RATE SENSITIVE, ESPECIALLY IN HOSPITALITY, AGRI-BUSINESS, AND TECH-ADJACENT SERVICE SECTORS.

A FLOATING RATE LOAN WITH RATE PROTECTION CREATES FLEXIBILITY WITHOUT OVERCOMMITTING TO CURRENT ELEVATED RATES.

Funding Strategies

FHLB Strategic Comparisons

Feature	Long-Term FHLB Advances	Short-Term CDs / Promo Deposits
Current Rate	Lower (inverted curve)	Higher due to competition
Repricing Frequency	None (fixed for term)	High (matures in 3-6 months)
Liquidity Impact	Neutral (collateralized)	Negative (cash outflows)
Stickiness	Stable	Low; high runoff risk
Regulatory Optics	Favorable for IRR	Potential scrutiny if overused

Funding Strategies

California-Specific Consideration

- **Regional liquidity crunch** in urban areas (tech/VC-driven) and **seasonal Agri-funding needs** inland.
- FHLB term funding allows for **regional balance**, reducing dependency on deposit campaigns that can cannibalize core accounts.
- Facilitates **pricing stability** in competitive metro markets like LA, Bay Area, and San Diego.

Best Practices When Using Longer-Term FHLB Advances

- **Ladder terms** (e.g., 2, 3, and 5 years) to avoid concentration risk.
- Model impact to **EVE and NII** to align with IRR limits.
- Match with **fixed-rate loans** to reduce basis risk.
- Use selectively to **replace hot money**—not core deposits.

Enhancing Return Without Excess Risk

1

Margin optimization through segmentation

2

Avoid mismatches in asset/liability durations

3

Use data to guide reinvestment decisions

Stress Testing Scenarios

Generate **realistic stress test scenarios** based on historical bank failures or liquidity crises (e.g., SVB, 2008 crisis).

Simulate multi-factor scenarios affecting:

- Wholesale funding loss
- Rapid NMD runoff
- Loan draw spike

Output dynamic stress curves based on current balance sheet profile.

Stress Testing and Regulatory Scrutiny

TEST EARNINGS AND CAPITAL UNDER RATE SHOCKS

FACTOR IN LIQUIDITY, CREDIT, AND DEPOSIT RUNOFF

PREPARE FOR EXAMINER FOCUS ON MODELING AND GOVERNANCE

Abrigo Solutions for your ALM Modeling

In addition to outsource reporting and in-house software we can…

Enhanced core deposit analytics	Connect Deposit Analytics	AI Driven Interest Rate Forecasts in Abrigo ALM model	Prepayment studies for non-standard loan types
• Assess stability of NMDs by depositor age, deposit vintage, and overall	• Robust suite of features designed to empower financial institutions with data-driven insights for strategic deposit management	• Bear vs Bull scenarios • Flattening, steepening, twisting curves	• Assessment of current prepayment levels for difficult to model loan types

Summary and Q&A

Improve measurements of your IRR position

Update your key model assumptions

Model and monitor risk accurately

Apply strategic actions to align risk and return