

Asset/Liability Management

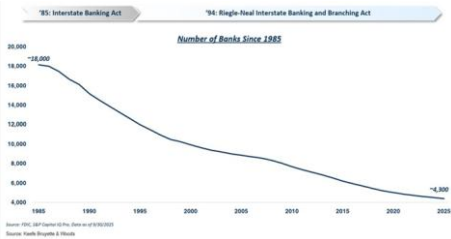
Jefferson Harralson
CFO United Community Bank
Jefferson_Harralson@ucbi.com – 404 242 4376

1

The Industry

2

Trend: # of banks shrinking for 30 years



3

Optimistic Outlook for Bank Fundamentals

Bank Fundamentals Pivoted in 2025

	'24	'25E	'26E	'27E
Growth				
Assets	3%	5%	6%	6%
Deposits	3%	5%	6%	6%
Net Interest Income	0%	12%	9%	6%
Net Otha	(0.10%)	0.22%	0.09%	0.03%
EPS	(2%)	15%	11%	8%
Efficiency				
FPP ROAA	1.40%	1.87%	1.78%	1.80%
ROAA	1.59%	1.18%	1.22%	1.24%
ROTE	13.1%	13.4%	13.4%	13.5%
Efficiency Ratio	61.2%	55.5%	56.5%	55.4%
Expense/Asp Assets	2.32%	2.36%	2.36%	2.34%
Capital				
Capital/Asp Assets	0.15%	0.22%	0.24%	0.24%
ROCA/Asp Assets	0.15%	0.18%	0.17%	0.18%
Reserves/Loans	1.22%	1.23%	1.22%	1.22%
Dividends				
Div/Asp Assets	0.1%	0.1%	0.1%	0.1%
Total Payout Ratio	44%	44%	39%	39%
Dividend Payout Ratio	34%	32%	30%	29%

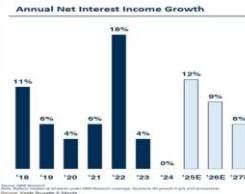
Source: NBS Research
Assumes 10% EPS growth in 2026, 11% in 2027, and 8% in 2028.
Dividend Payout Ratio is 30%.

- Expected positive environment for the industry in 2026 with 11% expected EPS growth
- Solid loan growth and stable credit
- Upward pressure on expenses, but NIM expansion creates operating leverage

4

4

Optimistic Outlook



- This year the outlook was both non-controversial and very optimistic. Industrywide, loans and deposits are expected to keep growing, while net interest margins should stay stable, resulting in net interest income growth in the high single digits.

5

5

Outlook is Encouraging

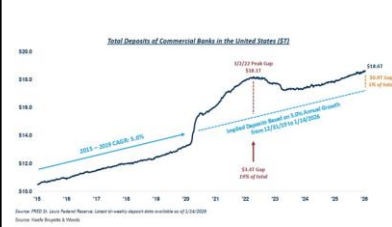


- A 10% EPS gain may not seem impressive in a tech-influenced world, but it is higher than what's expected from over half of the companies in the S&P 500 this year.
- In addition, it is quite an improvement from just two years ago, when the Fed's hike in short-term interest rates, plus the industry's need to replace the loss of low-cost deposits, caused over half of the 200 largest U.S. banks to report lower EPS.
- This year, over half of those same banks are expected to report an increase in EPS of over 10%.

6

6

Deposit Growth



- Concern over the future of deposit growth.
- The golden era of bank deposit growth driven by an accommodative Fed from 2008 into 2022 is over
- Banks need to prepare for a war over gathering deposits, a war that they haven't seen since before 2008.

10

10

Interest Rate Risk & Asset / Liability Management

11

11

Key Concept #1

Net Interest Margin

- Net Interest Margin (NIM) =

$$\frac{\text{Interest income} - \text{Interest expense}}{\text{Avg Earning Assets}}$$

12

12

Key Concept #2

Asset vs Liability Sensitive

- **Asset sensitive:** a bank is called asset sensitive if more assets than liabilities are expected to reprice within a given time interval
- **Liability sensitive:** a bank is called liability sensitive if more liabilities than assets are expected to reprice within a given time interval

13

13

What is Asset/Liability Management?

Asset / Liability Management (ALM) is the coordinated management of a bank's balance sheet, income statement, and economic value to control risk while achieving strategic objectives.

Key Risks:

- * **Interest rate risk:** How do changes in rates affect earnings and balance sheet values?
- * **Liquidity risk:** How risky is my funding base and how could this change as rates rise? Can the bank meet its obligations under stressed conditions
- * **Capital risk:** How do my capital ratios change when rates change – how does my TRUE capital change when rates change?

14

14

What is Asset/Liability Management?

* ALM is forward-looking by design. Rather than relying solely on historical performance, it uses models and scenarios to project outcomes under different interest rate environments and stress conditions. This allows management to identify vulnerabilities before they materialize.

* **Importantly, ALM is not about predicting interest rates.** Instead, it is about preparing the balance sheet to perform acceptably across a range of plausible outcomes. Sound ALM disciplines encourage thoughtful growth, realistic assumptions, and a healthy respect for uncertainty—balancing profitability with resilience for long-term sustainability rather than short-term gains.

15

15

Why A/L Management Matters

Banks run a structural mismatch by design
Banks fund themselves with short-term liabilities (mostly deposits) while investing in longer-term assets like loans and securities. This maturity transformation is core to banking, but it creates exposure to interest rate risk, liquidity risk, and capital volatility.

Small rate moves can have outsized effects
A 100–200 basis point shift can quickly change loan yields, funding costs, and customer behavior, while the balance sheet may take years to fully reprice. ALM provides a disciplined way to understand net interest income sensitivity, balance sheet value changes, and downstream impacts on regulatory capital.

ALM is enterprise-wide risk management
Lending strategy, deposit pricing, product design, and funding mix all drive ALM outcomes.

16

16

Governance

17

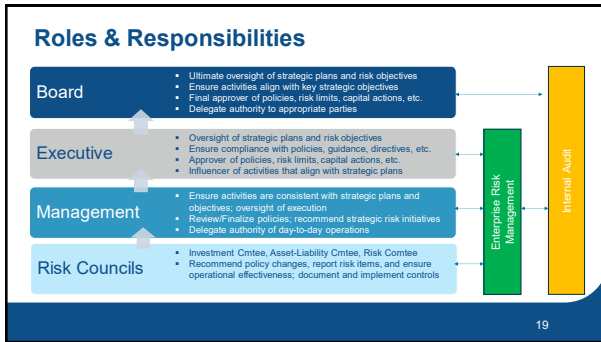
17

Who is Responsible?

	<i>Investment Committee</i>
<i>Chief Financial Officer</i>	<i>Asset / Liability Management Committee</i>
<i>Treasurer</i>	<i>Balance Sheet Management Committee*</i>
<i>Director, Asset Liability Management</i>	<i>Management Risk Committee</i>
<i>Pricing Analytics</i>	<i>Board Risk Committee</i>

18

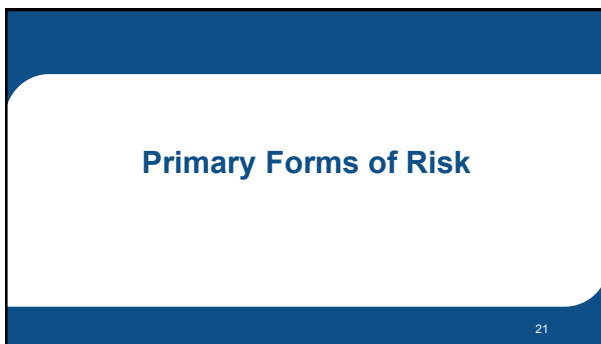
18



19



20



21

Interest Rate Risk

- Interest rate risk is the potential for changes in interest rates to adversely affect a bank's earnings, capital, or economic value.
- It arises because assets and liabilities reprice at different times, in different ways, and often using different benchmarks.

22

22

Three Forms of Interest Rate Risk

1. **Repricing risk:** timing mismatches (e.g., fixed-rate loans funded by variable-rate deposits)
2. **Yield curve risk:** non-parallel curve shifts affect values differently
3. **Basis risk:** different indices drive repricing (e.g., prime loans vs. fed funds/administered-rate deposits – or changing spreads to Treasuries)

23

23

How Customer Behavior Adds Risk to Banks

24

24

Each Account Type Behaves Differently

Assets

- Mortgages
- Consumer and Commercial Loans
- Investment Portfolio
- Cash

Liabilities

- Checking Accounts
- Board Rates
- Promotional Pricing
- Public Funds
- CDs

25

25

Estimating Non-Linear Behavior

As Rates Fall

- Loan customers begin to prepay
- Time Deposit customers begin to shift/remix towards Non-Maturity Deposits
- Increase of Market Value of Investment portfolio
- Overall liquidity returns to the banking industry

As Rates Rise

- Loan customers begin to extend
- Non-Maturity Deposit customers begin to shift/remix toward Time Deposits
- Decrease of Market Value of Investment portfolio
- Overall liquidity leaves the banking industry

26

26

Estimating Non-Linear Behavior

Question 1

- 1-Year Loan Financed by a 3-Month Deposit
- @ 5% @ 2%
- What is the interest rate risk inherent in this transaction?

This is repricing risk.

Question 2

- 1-Year Loan Priced off 1-Year Treasuries Financed by a 1-Year Time Deposit
- Loan: 1-year CD: 1-year
- Loan @ 1 yr UST +3%
- CD @ bank's 1 yr CD rate
- What is the interest rate risk inherent in this transaction?

This is basis risk.

27

27

Estimating Non-Linear Behavior

Embedded Options

Asset Side

1. 15-year, fixed-rate mortgage held in portfolio
2. Floor of 5% on a loan priced at prime + 1.5%
3. Cap of 6% on a loan priced at prime rate + 2%

Liability Side

1. 3-year, \$90,000 fixed-rate time deposit
2. Fixed-rate FHLB advance that the FHLB can call after 1 year

28

28

What Affects the Value and Behavior of Deposits? Its a lot more than rate!

Relationship: Have 2 or more accounts with the bank

Relationship: Does the account holder have a strong relationship with a bank employee, stockholder, etc.?

Term/Age: Have been a customer for 3 or more years

Location: Primary residence of customer or business is within the bank's core trade area (deposit study)

Interest Rate: Bank does not pay an above market rate for deposits

Transactions/Utilization: Have active transactions

Size: Balances are fully-insured

Transactions accounts

Is it the customer's primary personal or business account?

Does the customer use direct deposit?

What is the customer's balance and does it change substantially over time?

What is the rate paid on the account? Tiered?

29

29

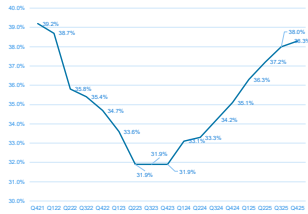
Bank Balance Sheets Change A lot!

30

30

Balance Sheets Can Change ALOT

At UCB, since 2021 floating rate loans moved from 39% to 32% and back to 38%

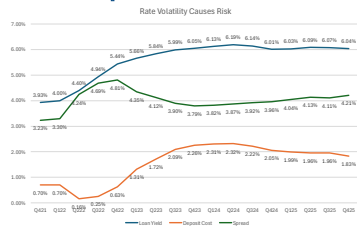


31

31

Loans & Deposits: Historical spreads, loan rates & deposit costs

• Spreads widened dramatically then tightened dramatically as rates rose

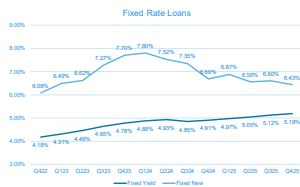


32

32

Closer Look at Fixed Rate Loans

• The industry is struggling as legacy fixed rate loans are taking a lot of time to reprice



33

33

Asset / Liability Analysis Tools

34

34

What Tools are Used in Analyzing Risk?

Tools / Analysis

- Daily monitoring
- Monthly forecasting and analysis
- Monthly risk evaluation dashboard
 - Reporting of adequacy risk ranges and early warning indicators
- Stress testing and sensitivities
 - Scenarios that simulate varying levels and pace of activities

35

35

How we Manage Interest Rate Risk

Through the framework of Earnings and Market Value
Volatility across time

Yield Curve Environments

- Parallel Shocks/Ramps
- Short End/Long End Shocks
- Forward Curve
- Stochastics

Overlay Regulatory Guidance and Peer Analysis



36

36

1a. Funds Transfer Pricing

- Allocates the cost and value of every asset and liability on the balance sheet
- Enables accurate profitability and better decisions

Strengths:

- FTP isolates loans and deposits – allowing each business line to be evaluated – leading to more accurate performance measurement
- FTP encourages better product mix, and growth decisions consistent with the overall strategic risk profile

Weaknesses:

- Model dependent and assumption sensitive
- Can be misunderstood and/or misused

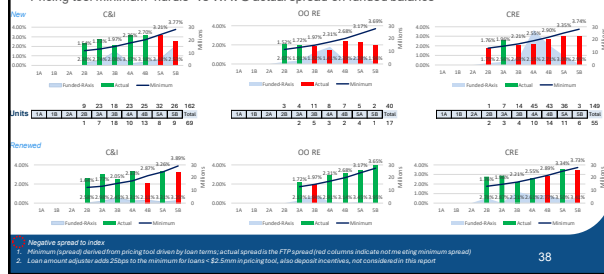
37

37

1b. Commercial Loan Production: February 2026

Product and Credit Spread Review

Pricing tool minimum "hurdle" vs WAVG actual spread on funded balance

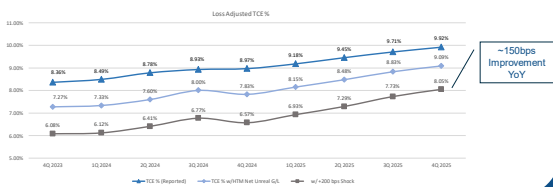


38

38

2. Tangible Common Equity Destruction

- Note the gray line in the estimate of the TCE ratio proforma for a +200 rate shock
- This highlights the significant risk to capital as rates rise



Note: impact of +200 bps shock includes impact from investments only; there would be other impacts from remaining balance sheet items

39

39

3b. Economic Value of Equity (EVE)

- EVE is the measurement of the Bank's long-term exposure to interest rates – and measures the change in value of a bank's assets and liabilities when rates move
- Used to compliment EAR's shorter-term view
- The change in the Present Value is calculated as an impact to capital

Strengths:

- Uses a long-term view of cashflows stressed across rate environments for long-term impacts

Weaknesses:

- Very heavily assumption driven

RRR Policy Measurements	Limit	3/31/2025	6/30/2025	9/30/2025	11/30/2025	12/31/2025	3/31/2026	2/28/2026
RRR Economic Value of Equity (EVE)								
400 bps Shock	2-46%	-34.01%	-22.02%	-27.00%	-10.58%	-12.66%	-15.81%	-18.86%
+200 bps Shock	2-36%	-15.85%	-14.52%	-16.52%	-9.69%	-8.83%	-7.82%	-7.33%
2-200 bps Shock	2-20%	8.72%	4.14%	-18.72%	5.64%	5.55%	4.81%	4.12%
+100 bps Shock	2-19%	5.52%	0.32%	4.27%	0.36%	2.49%	0.62%	1.52%
-100 bps Shock	2-19%	1.12%	1.00%	1.57%	1.22%	1.13%	0.92%	0.69%
200 bps Shock	2-20%	2.94%	2.72%	2.41%	1.44%	1.15%	0.51%	2.10%
-200 bps Shock	2-20%	5.14%	5.12%	7.61%	4.84%	2.21%	0.70%	-0.11%
400 bps Shock	2-46%	-9.69%	-7.33%	-13.89%	-4.58%	-6.67%	-7.41%	-9.00%

43

4. Gap Analysis

- Split all asset and liabilities into their respective repricing buckets
- Knowing the reinvestment/repricing range can reduce interest rate risk though strategic Asset remixing

Strengths:

- Easy to calculate and understand

Weaknesses:

- Uses prepayment assumptions that may not accurately mimic customer behavior
- Does not consider credit deterioration

This bank is
"Liability Sensitive"

	< 1 Year	1-5 Years	> 5 Years
Securities	1,636	1,202	7,215
Fixed Loans	971	5,214	2932
Variable Loans	7,668	1,550	978
Other Assets	231		
Total Assets	10,506	7,966	11,125
Time Deposits	3,386	205	
Other Deposits	8,500	14,000	
Borrowings	387		
Total Liabilities	12,273	14,205	-

44

5. Earning Asset & Liability Composition

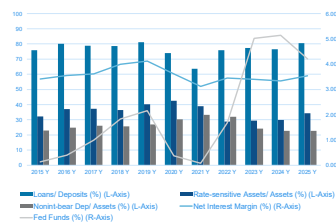
- Knowing the composition of Assets and Liabilities allows for the mitigation of repricing mismatches
- Knowing the direction of your Deposit base allows you to structure a Balance Sheet to offset potential earnings and market value risk

Strengths:

- Allows you to position yourself based on your risk profile

Weaknesses:

- Historical behavior is not indicative of future



45

6. Hedging

- Hedging is an underestimated tool
- Allows you to shape your risk profile within your risk appetite
- Hedge your positioning on either side of the balance sheet

Strengths:

- Tailor your risk profile

Weaknesses:

- Non-organic positioning – Adds complexity

Highlight – Current SOFR Forward indicates forward rates as of 3/23/2025, whereas Forward SOFR rates of 3/28/2025

46

46

Management

47

47

A/L Management Fundamentals

- Match fund repriceable assets with similar repriceable liabilities so that periodic GAPs approach zero.
- Use off-balance sheet transactions, such as interest rate swaps and financial futures, to hedge.
- Parallel shifts in the yield curve of +/- 2% may not be sufficient to adequately assess IRR exposure
- Assess rate changes of +3% or +4% in addition to changes in the slope and twists of the yield curve

Stress Testing

- Includes both scenario and sensitivity analysis

Risk Mitigation

- Should be designed to limit downside earnings exposure or manage income or economic value of equity (EVE) volatility
- Should be commensurate with the activities and level of risk approved by senior management and the board;
- Board and senior management must understand the institution's hedging strategy when using these instruments, including the potential risks and benefits of the strategy.

48

48

A/L Management Actions

If the company needs to **REDUCE** asset sensitivity:

- Buy longer-term securities.
- Lengthen the maturities of loans.
- Move from floating-rate loans to term loans.
- Offer short CD specials
- Engage in a pay floating, receive fixed swap
- Buy asset caps

If the company needs to **INCREASE** asset sensitivity:

- Buy short-term securities.
- Make more loans on a floating-rate basis.
- Run a longer term deposit special
- Issue long-term subordinated debt.

49

49

Key Concept: Duration and Pricing/Value Changes

Measuring bond risk related to changing interest rates

50

50

Bond Concept: Prices and Rates Move Opposite

- **Bond prices fall when interest rates rise** because fixed coupon payments lose relative value.

• Coupon Payments Fixed

- Bond coupons are locked at issuance, making older bonds less attractive when new bonds pay higher rates.

• Role of Duration

- *Duration quantifies bond price sensitivity to interest rate changes and measures risk exposure effectively.*

51

51

Bond Duration 101

- **Definition of Bond Duration**
 - Duration measures a bond's price sensitivity to interest rate changes, indicating pricing risk
- **Weighted Average Timing**
 - Duration reflects the weighted average timing of cash flows, including coupons and principal repayments.

- *A bond with a 1 year duration will fall (rise) generally 1% in an up (down) 100 environment*
- *A bond with a 5 year duration will fall (rise) generally 5% in an up (down) 100 environment*

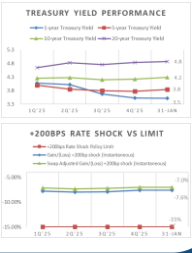
Duration helps approximate price changes quickly, aiding portfolio management and interest rate risk education.

52

52

Key Core Investment Portfolio Metrics continued:

Key Core Investment Portfolio Metrics Interest Rate Risk					
	3Q/25	2Q/25	3Q/25	4Q/25	31-Jan
Effective Duration (%)	3.9	4.0	4.0	3.8	3.8
Effective Duration - AFS	2.6	2.7	2.6	2.4	2.4
Effective Duration - HTM	6.6	6.8	6.8	6.7	6.6
Swap Adjusted Effective Duration (%)	3.5	3.7	3.6	3.5	3.5
Swap Adjusted Effective Duration - AFS	2.1	2.2	2.1	1.9	1.9
Convexity	(0.05)	(0.05)	(0.05)	(0.01)	(0.01)
+200bp shock (Instantaneous) - Total Portfolio	(0.08)	(0.11)	(0.14)	(0.14)	(0.14)
Gain/(Loss) +200bp shock (Instantaneous)	-7.8%	-8.0%	-7.9%	-7.6%	-7.6%
Gain/(Loss) +200bp shock (Instantaneous) - AFS	-5.8%	-5.8%	-5.3%	-5.1%	-5.1%
Gain/(Loss) +200bp shock (Instantaneous) - HTM	-12.3%	-12.3%	-12.5%	-12.3%	-12.3%
Swap Adjusted Gain/(Loss) +200bp shock (Instantaneous)	-7.1%	-7.3%	-7.2%	-7.0%	-7.0%
Swap Adjusted Gain/(Loss) +200bp shock (Instantaneous) - AFS	-4.7%	-4.8%	-4.5%	-4.3%	-4.3%



53

53

Drivers and Practical Applications of Duration

54

54

What Drives Duration

- **Impact of Maturity on Duration**
 - Longer maturity bonds have higher durations due to cash flows occurring further in the future, increasing interest rate sensitivity.
- **Coupon Rate Effects**
 - Lower coupon bonds have higher durations as they return less value early, concentrating payments at maturity.
- **Zero-Coupon Bond Duration**
 - Zero-coupon bonds have the highest duration since all cash flow occurs at maturity, maximizing time-weighted risk.

55

55

How Banks Use Duration

- **Risk Comparison Using Duration**
 - Duration helps banks compare bonds with similar yields but different interest rate risk profiles effectively.
- **Asset-Liability Management**
 - Duration measures assess mismatches in assets and liabilities impacting economic equity during rate changes.

56

56

Key Concept: The Importance of the Investment Portfolio in Interest Rate Management

57

57

Key Concepts: Deposit Beta

58

58

What Is Deposit Beta?

Definition

Deposit beta measures how much banks adjust deposit interest rates in response to Fed Funds rate changes

Practical Example

If the Fed raises rates by 100 basis points and the bank raises deposit rates by 40 basis points, deposit beta is 40%.

Importance for Banks

Deposit beta impacts bank profitability as deposits are often the largest and cheapest funding source, influencing pricing and competitiveness.

59

59

Impact on Bank Profitability

Deposit Beta and Profit Margins

Lower deposit beta slows deposit rate increases, expanding net interest margins in rising-rate environments.

Liquidity and Customer Loyalty

Low deposit beta indicates strong customer loyalty but may hide runoff risks from competitive rates.

Risk Management and Planning

Deposit beta is essential for earnings simulations, stress testing, and regulatory monitoring of interest rate risk.

60

60

Low vs. High Deposit Beta

Low Deposit Beta Characteristics

Low deposit beta (20%-40%) shows a sticky deposit base valuing convenience over interest rates, benefiting short-term margins.

Medium Deposit Beta

Medium beta (40%-70%) reflects balanced pricing and moderate competitive pressure on deposit rates.

High Deposit Beta Implications

High deposit beta (70%+) indicates rate-sensitive customers, requiring banks to match market rates, increasing funding costs.

Strategic Deposit Beta Management

Optimal deposit beta varies by bank strategy, balancing margin protection with deposit stability in diverse rate environments.

61

61

Why Not All Deposits Behave the Same

Varied Deposit Betas

Deposit beta differs by product because customer expectations and alternatives vary widely across deposit types.

Beta by Deposit Product

Non-interest demand deposits have near zero beta; time and brokered deposits have the highest betas near one-to-one with market rates.

Portfolio vs Acquisition Beta

Banks manage portfolio beta for existing balances and acquisition beta for new balances, with acquisition beta often exceeding 100%.

Strategic Pricing Insights

Understanding product-level betas enables banks to optimize pricing strategies for funding cost management and liquidity needs.

62

62

Deposit Betas Change A Lot

Dynamic Deposit Beta

Deposit beta is not static and changes with market conditions and customer behavior in rising-rate environments.

Customer Awareness and Mobility

Digital banking and easy rate comparisons increase customer mobility, accelerating deposit repricing and beta increases.

Importance of Real-Time Data

Using real-time data, market intelligence, and customer analytics improves deposit behavior forecasting accuracy.

63

63

Key Concept: Prepayment Speeds

64

64

What Are Prepayments?

Definition of Prepayments

Prepayments are unscheduled principal payments made before loan maturity, often without penalty.

Impact on Interest and Cash Flow

Prepayments reduce total interest earned and alter timing of principal cash flows affecting reinvestment and risk management.

Prepayment Optionality

Prepayments add uncertainty to loan life and cash flows, influenced by borrower behavior and external economic factors.

65

65

Slower Prepayments and Asset Extension

Effect of Rising Interest Rates

Higher interest rates reduce refinancing incentives, causing borrowers to retain lower-rate loans longer, slowing prepayments.

Extension Risk and ALM Exposure

Extension risk increases bank exposure by lengthening asset duration while liabilities reprice upward, impacting margins.

Impact on Liquidity Planning

Delayed principal cash inflows due to slower prepayments can increase reliance on external funding and reduce balance-sheet flexibility.

Prepayment Modeling Importance

Accurate prepayment modeling is essential to capture extension risk and manage interest rate risk effectively in banking.



66

66

Model Risk and ALM Outcomes

Impact of Prepayment Accuracy
Prepayment estimate accuracy greatly affects ALM outcomes by influencing multiple risk dimensions simultaneously.

Consequences of Misestimation
Underestimating or overestimating prepayment speeds leads to misjudged asset life and liquidity risks.

Best Practices in Modeling
Use multiple data sources, validate assumptions, and stress-test various prepayment scenarios for reliability.

Importance in Banking Strategy
Prepayment estimation is essential for effective interest rate risk management and balance-sheet decision-making.

67

Static Prepayment Assumptions

- Prepayments
 - Prepays are derived from a third-party vendor (Mountain View Analytics)
 - Overlays were made to refine prepayments for convexity using management expertise and approved for use in June of 2024

Assumed Prepay Dates	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Rate	26.8%	22.8%	19.7%	16.6%	13.5%	10.4%	7.3%	4.2%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prepayment	27.0%	23.0%	19.8%	16.7%	13.6%	10.5%	7.4%	4.3%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

68

Models and Assumptions

69

Summary

Tools / Analysis

- Static or Dynamic Balance Sheet?
- Duration
- Prepayment Speeds
- Mix Change Assumption
- Deposit and Loan Betas
- Scenarios

70

70

Future State – Dynamic Stochastic Earning Analysis

- All independent variables forecasted with stochastic analysis
- Explaining stochastic drivers introduces nonlinear risk dynamics
- Stochastic models help us understand the interaction between various variables

Interest Rates



What if market rates move unexpectedly? SEA is another way to assess the impact of potential losses across a wide range of scenarios.

Balance Sheet Volumes



How comfortable are you with your budget forecast? SEA allows you to better understand biases you have in your forecasting process.

Pricing Spreads



What type of impact do pricing spreads have on your earnings? SEA allows you to quantify potential vulnerabilities due to changes in product pricing.

Loan Prepayments



What is the short-term cost to earnings of the option you are selling? SEA allows you to observe how prepay dynamics can impact earnings.

SEA – Stochastic Earnings Analysis

71

71

Liquidity

72

72

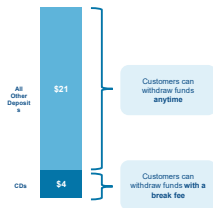
It's A Wonderful Life – Bank Run



73

73

Liquidity Management



- Banks have multiple sources of liquidity that give us comfort to sufficiently manage customer withdrawals:
 - Banks hold a minimum amount in cash during the day and overnight
 - Equates to about 1% of total deposits → not a lot of cash compared to banks' deposit base!
 - Conduct daily forecasts and regular stress tests
 - Test wholesale sources of funding

74

74

Ability to Borrow Wholesale

Potential Liquidity Source	Time to Funding	Length/Term	Collateral Required	Insurance Constraints	Capacity Constraints	Operational Ease
Fed Funds Lines	Same Day	Overnight	No	Market Availability	2% of Total Assets	Excellent
FHLB Advances	Same Day	Overnight to 10 years	Yes	Available Collateral and Advance Rate	Varies with Pledged Collateral	Excellent
FBI Discount Window	Same Day	Overnight	Yes	Eligible Collateral	Varies with Pledged Collateral	Excellent
COARS One Way Buy	1 week or less	1 month to 5 years	No	None	2% of Total Assets	Easy
ICO One Way Buy	1 week or less	1 month to 5 years	No	SEC rule 144 may limit volume	2% of Total Assets	Easy
Brokered CDs	2 weeks or less	1 month to 10 years	No	SEC rule 144 may limit volume	10% of Total Assets	Easy
Insured Customer Deposits	Varies	Any	No	Not Pledged Rate (CDs)	No	Easy
Wholesale Deposits	Varies	Varies	No	No	No	Easy
Uninsured Customer Deposits	Varies	Any	No	Not Pledged Rate (CDs)	No	Moderate
Repurchase Agreements	Varies	Overnight to 1 month	Yes	No	Total Unencumbered Securities	Moderate
Brokered MMCA & NOW	Varies	Up to Contract Maturity	No	Not Pledged Rate (CDs)	2% of Total Assets	Moderate
Debt Issuance	Weeks	Any (Typically 1 year or longer)	Varies	Yes	No	Moderate
Securitization	Weeks	Any (Typically 1 year or longer)	Yes	No	Available Collateral	Difficult
Preferred Stock Offering	Weeks	Any (Typically 1 year or longer)	No	No	No	Difficult
FBI Special Funding Programs	Varies	Varies	Varies	Priority	Priority	Varies depending on program

75

75

The Lessons from Silicon Valley Bank

Massive ALCO Failure

76

76

SVB 2019

Assets

Cash & short-term investments	~\$5
Loans (net)	~\$39
Investment securities AFS	~\$24
Investment securities HTM	~\$3
Other assets	~\$1
Total Assets	~\$72

Liabilities & Equity

Deposits	~\$62
Borrowings & other liabilities	~\$3
Shareholders' equity	~\$7
Total Liabilities + Equity	~\$72

Securities Duration (2020)
AFS Securities = 3.7
HTM Securities = 3.7

Earnings at Risk 12/31/21		
+200	22.9	%
+100	10.9	
-100	(6.4)	
-200	(8.6)	

77

77

Historical Deposit Surge Ensues



Total Deposits (\$billions)

2019	~\$61.8
2020	~\$102.0
2021	~\$189.2
2022	~\$173.1

- SVB's deposits grew by \$128 billion in two years!
- Over 300% growth!

78

78

2022 – Major Balance Sheet Shift

The following table presents our NII sensitivity exposure related to an instantaneous and sustained parallel shift in market interest rates of 100 and 200 bps at December 31, 2022, and December 31, 2021.

Rate Change	Increase (Decrease) in NII	
December 31, 2022:		
+200	3.5	%
+100	1.8	
-100	(1.8)	
-200	(5.8)	
December 31, 2021:		
+200	22.9	%
+100	10.9	
-100	(6.4)	
-200	(8.6)	

*Management concludes that the balance sheet is "asset-sensitive and well positioned for rising rates"

79

79

2022 – Major Balance Sheet Shift – What Happened?

*The reduction in our NII asset sensitivityis primarily driven by:

- The shift in our mix towards more interest bearing deposits
- Increase in deposit beta assumption
- **Termination of our pay fix swaps**
- **The extension of our fixed income portfolio at higher rates**

Note: less Asset Sensitive
Note: less Asset Sensitive
Note: less Asset Sensitive***
Note: less Asset Sensitive***

***** SVB Balance became naturally less asset sensitive and then management strategically made it a lot less asset sensitive !**

80

80

2019 Compared to 2022

Assets	2019	2022
Cash & short-term investments	~5	~13
Loans (net)	~39	~74
Investment securities – AFS	~24	~27
Investment securities – HTM	~3	~91
Other assets	~1	~6
Total Assets	~72	~212
Liabilities & Equity	2019	2022
Deposits	~62	~173
Borrowings & other liabilities	~3	~22
Total Liabilities	~65	~195
Shareholders' equity	~7	~16
Total Liabilities + Equity	~72	~212

Historic deposit surge mostly deployed into long HTM securities
Securities duration moves to 5.6 years from 3.7 years

A plus 200 environment creates \$13 billion in unrealized losses (albeit not in the capital ratios mostly due to its HTM status)

81

81

SVB & Held to Maturity (HTM) Accounting Treatment

From the 2022 SVB 10-K

- SVB's \$92 billion HTM portfolio held at amortized cost
- Its \$16 billion in unrealized losses were NOT reflected in regulatory or GAAP capital
- Nevertheless, the losses were FULLY REAL ECONOMICALLY

SVB Capital = \$16 billion
Unrealized HTM loss = \$16 billion

82

82

Then: Disaster – And A Lesson in Funding Diversity Occurs

Peter Thiel's Founders Fund advised portfolio companies to withdraw funds from Silicon Valley Bank, stating there was little to no downside in moving deposits and that caution was warranted.



That guidance, relayed privately and then echoed publicly by dozens of founders, is what precipitated the run

83

83

Now You Are the CFO

Decision Point #1 – Asset Strategy

As an ALCO member in 2021, you must recommend how to deploy excess deposits.

Your ALCO analytics team presents the following modeling results:

*In a +200 bp rate shock, modeled spread income increases by 22.5%

*In a -200 bp rate shock, modeled spread income declines by 8.6%

Management concludes that the balance sheet is "asset-sensitive and well positioned for rising rates"

*Short-term / floating-rate assets currently yield ~0.25%, materially below longer-duration securities

ALCO Question

Given a \$110 billion surge in deposits -- How would you recommend deploying excess liquidity given these results?

Select **one or two primary strategies** and be prepared to defend them:

- Increase long-duration fixed-rate securities to lock in yield
- Stay short / floating despite the ~0.25% yield and accept margin pressure
- Shift toward a barbell strategy (mix of short assets and selective duration)
- Intentionally slow deposit growth

*- Other (describe): _____

84

84

Now You are the CFO

Decision Point #2 – Accounting & Capital Visibility

You have purchased a large volume of longer-duration securities.

→ How should these securities be classified?

- Mostly Available-for-Sale (AFS)
- Mostly Held-to-Maturity (HTM)
- A balanced mix of both

85

85

Summary

2019

- *HTM securities ≈ **\$3B**
- *Duration risk **present but controlled**
- *Securities a *supporting* asset

2020–2021

- *Deposits surge (VC funding boom)
- *Loan demand lags
- *Management **locks in yield**
- *Long-duration bonds moved to **HTM**

2022

- *Rates rise rapidly
- *HTM losses balloon
- *Equity *economically impaired*
- *Liquidity stress → forced realization → confidence collapse

86

86

Lessons

Interest Rate Risk Exposure

A concentrated duration exposure in bank portfolios can create existential risks if not properly hedged against rising rates.

Maturity Transformation Problem

Banks fund long-dated assets with short-dated liabilities, creating sensitivity to rate shocks and liquidity risks.

Governance and Risk Management Failures

SVB's board and management did not adequately manage interest rate and liquidity risks, missing timely corrective measures.

ALCO Strategic Practices

ALCO must bound interest rate risk with limits, independent challenges, and hedging aligned to plausible scenarios.

87

87
