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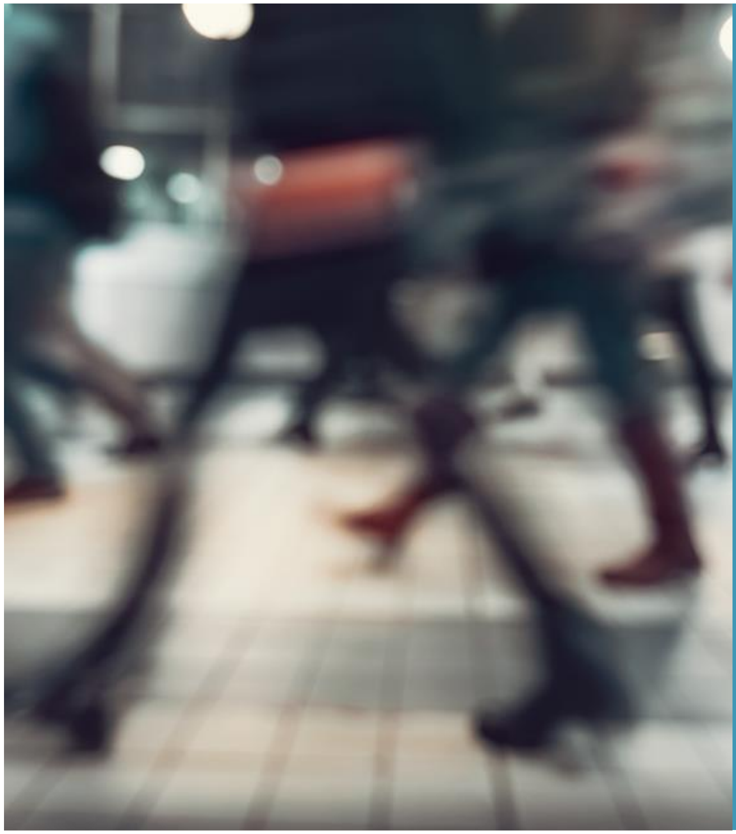

You Can't Predict, but you Can Prepare: Interest Rate Swaps in Today's Market

VIRGINIA BANKERS ASSOCIATION

CFO & Lending/Credit Conference

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Current themes in the financial industry

Liquidity

- It is still here
- Strategically measure
- Margin pressure
- M&A impact?

Yield Curve

- Steepness came and went, will it come back?
- What are we rooting for?
- 2/10s vs FF/5s
- OCI/HTM

Capital

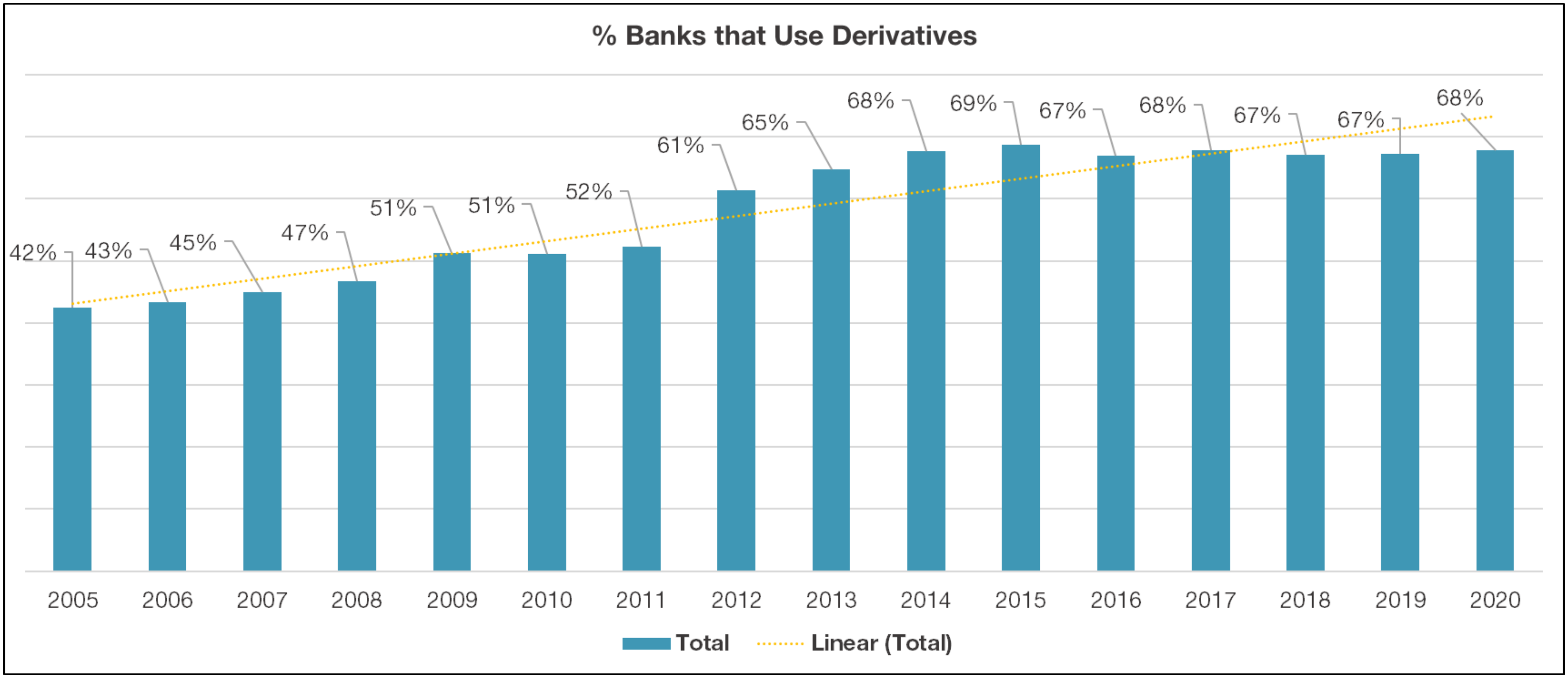
- Debt markets remain robust
- Spreads still tight
- Off market transactions / know your underwriter

M&A and Valuation

- Deals have started
- Larger banks have better multiples
- MOE type deals
- Tech & scale

Community Banks' Use of Interest Rate Derivatives Steadily Increased Post-Crisis. . .

Banks $1 billion - $20 billion in assets with interest rate derivatives through the end of 2020



Source: SNL Financial

. . . In Part Due to Increased Transparency and Simplified Accounting…

Transparent Regulatory Roadmap	• Dodd-Frank derivatives regulations created a transparent roadmap for derivatives use
Eligible Contract Participant (ECP) Compliance	• New Dodd-Frank regulations for the derivatives business actually created greater clarity on how a bank can and should offer these products safely to clients
Simplified Accounting	• ASC 815 issued in August 2017 simplifies derivatives accounting allowing more hedging strategies to qualify and reducing the burden of effectiveness testing versus the former FAS 133 rules
Examiner Acceptance	• Bank examiners are staying abreast of hedging trends and have invited Piper Sandler to present on the derivatives market at FFIEC forums

Post-crisis derivatives regulation supports establishing both balance sheet and customer back-to-back programs

…But These Derivatives Carry Certain Risks

Regulatory Risk

- Policies and procedures for monitoring initial and ongoing risk most scrutinized
- Components of Dodd-Frank Act such as Volcker Rules create restrictions
- **Manage by ensuring derivatives are used for true hedging strategies and not speculative purposes**

Accounting Risk

- Hedge accounting is jeopardized and swap market value is forced to flow through earnings and regulatory capital
- Potential for "ineffectiveness" or absence of perfectly offsetting cash flows
- **Simplification of hedge accounting rules reduce risk**

Market Risk

- Risk that market moves the opposite of what the financial institution was hedging, leading to "buyer's remorse"
- **Manage by focusing on balance sheet needs rather than timing the market and getting "the right rate"**

Counterparty Risk

- Risk that counterparty defaults and derivative's value must be written off
- Chance of counterparty default may put hedge accounting treatment in jeopardy
- **Manage with margin and credit support terms**

Balance Sheet Hedging: Establishing a Disciplined Approach

- **Given macro uncertainty, financial institutions are migrating to neutral**
- **Use economic data for pricing, not strategy development**
- **Understand your exposure to develop sound strategies**
  - Pick 2-3 realistic yield curve shifts
  - Quantify these impacts for ALCO and identify potential remedies
- **Stick to “inside-out” approach**
  - Realistic modeling leads to effective strategy development

What is the market giving us?

Yield Curve Reactions

Index	6/30/20	9/30/20	12/31/20	3/31/21	6/30/21	8/18/21
Fed Funds Target	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
2 Year Treasury	0.15%	0.13%	0.16%	0.16%	0.25%	0.21%
5 Year Treasury	0.29%	0.30%	0.39%	0.94%	0.89%	0.76%
7 Year Treasury	0.49%	0.47%	0.64%	1.42%	1.24%	1.04%
10 Year Treasury	0.66%	0.71%	0.88%	1.74%	1.47%	1.27%
2-10Yr Treasury Spread	0.51%	0.58%	0.72%	1.58%	1.22%	1.06%
FFT-5Yr Treasury Spread	0.04%	0.05%	0.14%	0.69%	0.64%	0.51%

Source: Bloomberg, Fed Funds Target is Upper Bound
Market data as of 8/18/2021

Popular Hedging Strategies

- **Combine pay-fixed swap with short-term funding for rate protection**
  - Saves roughly 15-20bps over a term borrowing
- **Swap floating loans to fixed for yield pick-up**
  - Enhances earnings by nearly 80bps today
- **Swap fixed rate bonds to floating to prepare for rising rates**
  - Sacrifices some yield for floating rate exposure and TCE protection
- **Hedge Future Debt Issuance**
  - Lock in current rates while protecting TBV against rising rates

Common Strategies for Hedging Rising Rates

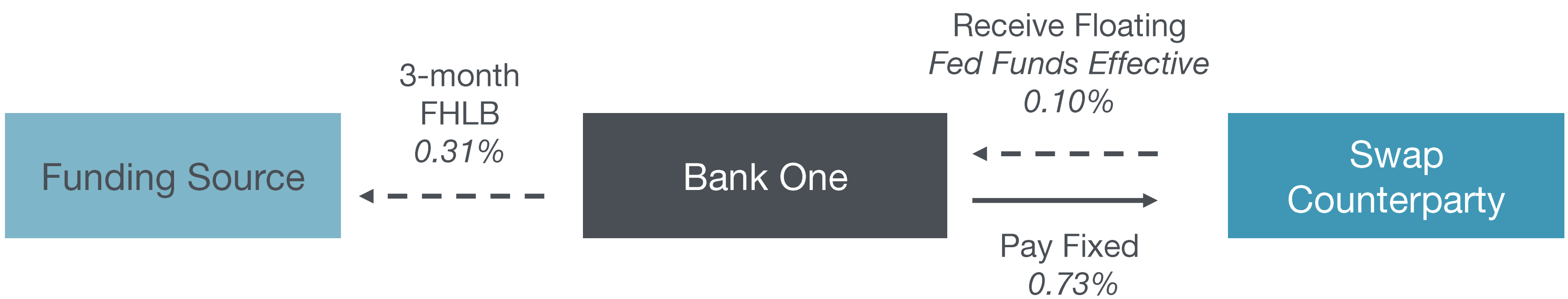
Balance Sheet Item:	Derivative Instrument:	Hedge Accounting Application:	Interest Rate Risk Impact:
Rollover of Short-term Fixed Rate Funding (e.g. 90-day FHLB)	Pay Fixed Swap or a Cap Purchase	Cash-flow hedge	Extend Liability Duration
Variable Rate Funding			
Fixed Rate Investment Securities (Agency bullets, Taxable Munis)	Pay Fixed Swap	Fair-value hedge, short-cut possible with critical terms matching	Reduce Asset Duration
Pre-payable Investment Securities (MBS, Agency CMBS)	Pay Fixed Swap	Fair-value, long haul "Last of Layer hedge"	Reduce Asset Duration
1-4 Family Fixed Rate Mortgage Loans			

"Beat The Spread" – How Does It Work?

The use of an interest rate derivative to manage the Bank's rate risk creates an opportunity to reduce interest expense relative to comparable FHLB structures

- Enter into a Pay-Fixed Receive Fed Funds Effective interest rate swap
  - Take out 3 month FHLB advance, settling on the effective date of the swap
  - Roll the 3 month advance each quarter matching the reset dates of the swap

- Designate the swap as a cash flow hedge of the benchmark component (Fed Funds Effective) of the advance rate
  - Test the hedging relationship for effectiveness and prove that the hedging relationship is highly effective



Sample pricing for 5 year Beat the Spread

All-in = Pay Fixed Swap Rate + 3M FHLB Advance – Fed Funds Eff.

0.94% = 0.73% + 0.31% – 0.10%

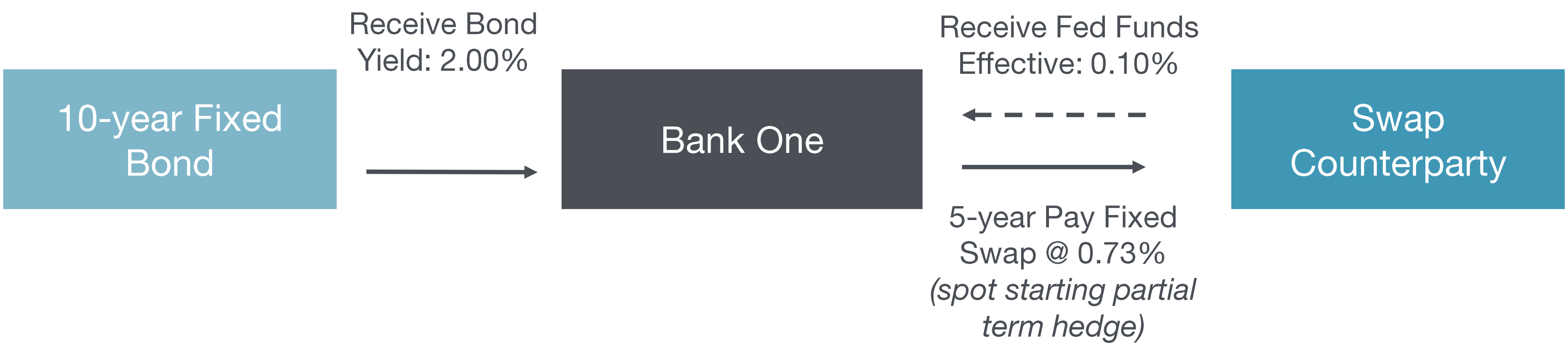
*Save **17bps** compared to 1.11% 5yr FHLB Advance*

Market valuation as of 8/18/21

Hedge Rising Rates by Converting a Fixed Rate Bond to a Synthetic Floater

Target bonds with predictable cash flows like agency bullets and taxable municipal bonds with bullet maturities or long calls

Example:



- **Convert** a 2.00% 10-year fixed bond to a FFE+127bps floater for the next 5-years
- **Elect Short-Cut Fair Value hedge accounting** which eliminates effectiveness testing requirements and earnings volatility when structured properly

Market valuation as of August 18, 2021, subject and indicative

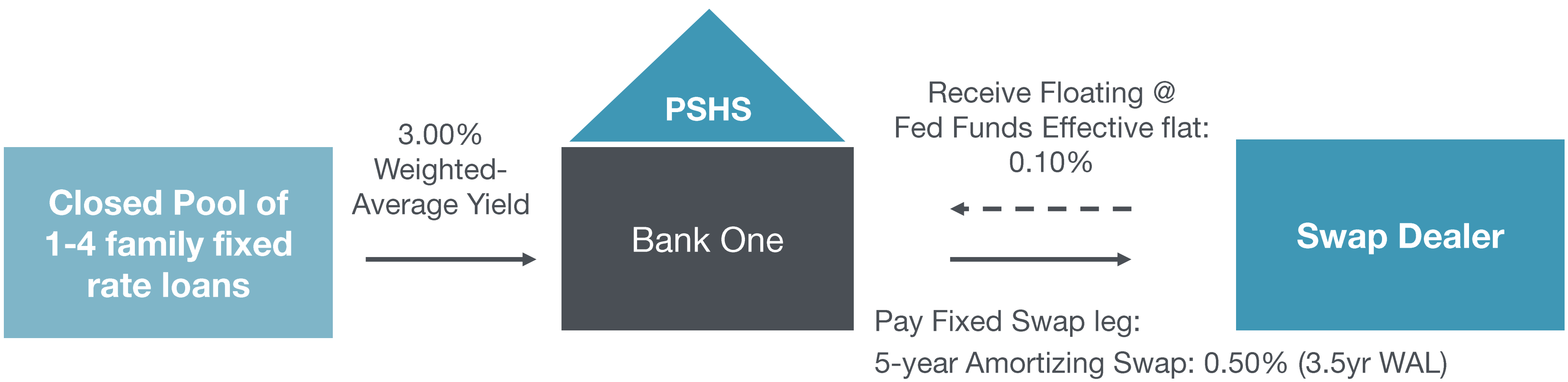
Last of Layer Overview & Recent Updates

Allows pre-payable assets to qualify for an effective hedge relationship, but with some accounting complexity

- On May 5th, the FASB released updated guidance which now allows the hedge to more closely match the interest rate risk of the pre-payable cash flows

How does it work?

- Identify a pool of pre-payable fixed-rate loans/securities and model the balances across different rate environments (PSHS can help)
- Structure a pay fixed interest rate swap with a notional schedule amortizing in line with pool prepay speeds

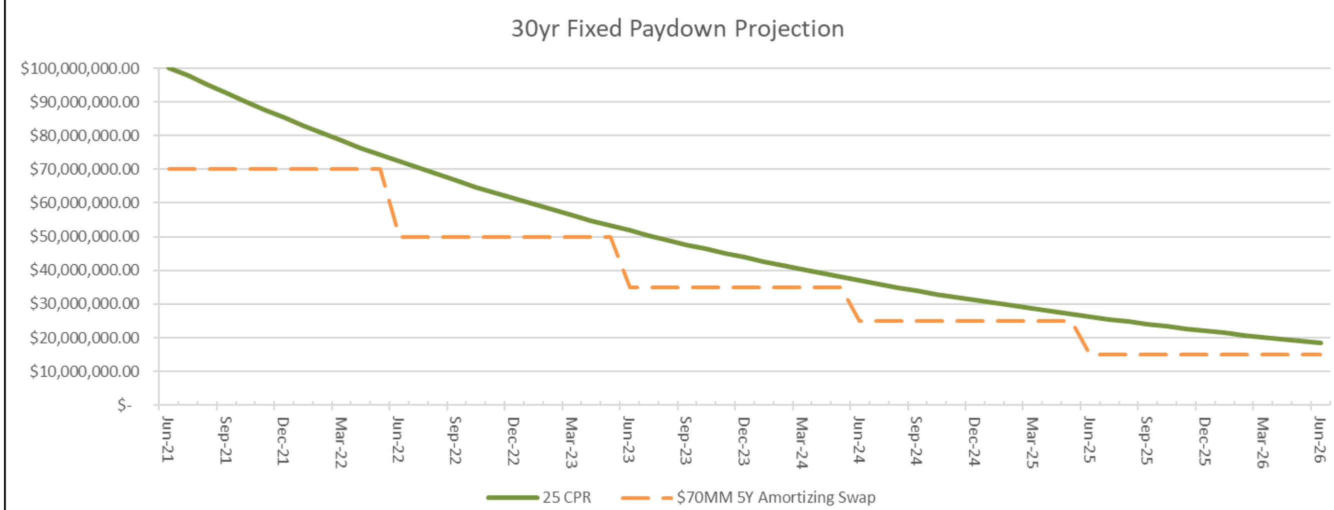


Piper Sandler will help educate management, model the loans and structure the swap strategy

Mortgage Loan Balance Prepayment Projections

- A pay fixed amortizing swap notional closely hedges the interest rate risk of a closed pool of fixed rate mortgage loans
- Liability sensitive credit unions can position IRR and NEV to be more neutral to prepare for rising rates

EXAMPLE: Last of Layer on pool of 30yr Fixed Rate Mortgage Loans



	-50 Gain Loss	50 Gain Loss	100 Gain Loss	150 Gain Loss
Total: Fixed MBS MTM Change	1,219,860	(1,282,940)	(2,704,075)	(4,294,834)
$70MM 5Y Amortizing Swap MTM Change	(985,617)	967,758	1,918,027	2,851,166
Hedge Ratio (MTM)	81%	75%	71%	66%

Case Study: Cash Deploy and Receive-Fixed Swaps

Case Study

- $1B asset financial institution
- Asset sensitive (parallel shift only)
- Exposed to short end of the curve
- Excess liquidity

Deploy $50M of excess cash yielding 0.10% into a mix of securities yielding 1.58%

- 80% 20yr 2.0% MBS
- 20% non-agency CMBS

Swap $75M of floating-rate loans to fixed for 7 years

- Pick up 80bps of additional yield vs. 1ML +200

	Base	Pro Forma Strategy
Cash / Assets (%)	10%	5%
Securities / Assets (%)	15%	20%
NIM	3.00%	+0.13%
Flat Net Interest Income	$30.0M	+$1,342
-100 Net Interest Income	$28.5M (5.0%)	+$1,247
+100 Net Interest Income	$31.5M +5.0%	+$132

LIBOR and cash are floored at 0 bps in the down rate scenario

Commercially-Oriented Banks Can Benefit From a Customer Loan Swap Program

Why now?

- Offer customers the long tenor, fixed rate loan they desire at a lower synthetic fixed rate
- Many commercial borrowers now expect a derivative offering
- Differentiate your product offering with custom structures such as cancelable features and longer tenor deals

A client derivative hedging program can help enforce loan pricing discipline:

- *Front-end*: discourages bankers from pre-committing/promising fixed rates before loan closing date
- *Back-end*: helps with breakage termination enforcement/not waiving prepay penalties or setting low/no penalties on fixed rate loans that ignore bank funding losses

Generate meaningful income, even on a small subset of loans

- Non-interest fee income opportunity / diversifies revenue streams
- Enhance investor/analyst perceptions of the Bank with increased fee income

Hedging Program Services Can Be Tailored To Your Needs

Derivative Education

- Educate management on hedging best practices
- Educate company's board of directors on use of derivatives for risk management

Negotiate Counterparties & Policy Development

- Help negotiate ISDA/CSAs with Swap Dealers
- Develop interest rate hedging policies

Strategy Development

- Work with ALCO on hedging strategy development
- Quantify impact of potential strategies on rate risk profile and other key metrics

Trade Execution and Hedge Accounting Services

- Competitive trade execution services
- On-going hedge accounting reporting and support

Risk Considerations of Hedging with Derivatives

While derivative transactions hedging future liabilities have many benefits, they also require the Management and Board of Directors to carefully review the associated risks and considerations.

SOME OF THE RISK FACTORS MANAGEMENT AND THE BOARD SHOULD CONSIDER INCLUDE:

Market risk

- Risk that market moves in the opposite direction of the hedge leading to “buyer’s remorse” and a net cost to the hedge over its life

Counterparty risk

- Risk that counterparty defaults and derivative’s value must be written off
- Risk that counterparty margin posted does not cover market value
- Chance of counterparty default may put hedge accounting treatment in jeopardy

Accounting risk

- If hedge accounting is jeopardized through some misalignment between the hedge and the hedged item, the derivative market value of the hedge may be forced to flow through earnings and regulatory capital

Regulatory risk

- Policies and procedures for monitoring initial and ongoing risk most scrutinized
- Minimal risk when derivative strategy is used for hedging and not speculative use

Liquidity Risk

- Management must evaluate the effect an interest rate derivative strategy may have on liquidity calculations when collateral calls and periodic hedge payments are considered

Key Takeaways

- Understand why derivative use is up
- Know what part of the yield curve matters to your institution
- Small moves in rates should lead to execution – don’t wait for the parallel shifts
- Don’t put your interest rate risk concerns on your customers
- Do NOT root for your hedge!

Appendix

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Scott Hildenbrand is a managing director and the head of the financial strategies group at Piper Sandler. Hildenbrand also runs Piper Sandler Hedging Services, LLC, which is registered as a swap introducing broker with the Commodity Futures Trading Commission and is a member of the National Futures Association.

Previously, Hildenbrand was a principal and chief balance sheet strategist of Sandler O'Neill + Partners, L.P. He headed the balance sheet analysis and strategy group, working with financial institutions on balance sheet strategy development, which includes interest rate risk management, investment portfolio strategy, retail and wholesale funding management, capital planning, budgeting, and stress testing. Hildenbrand also worked closely with the firm's investment banking group to identify and develop strategic opportunities for clients involved in mergers and acquisitions.

Hildenbrand previously worked in Sandler O'Neill's interest rate products group, focusing on developing and implementing structured wholesale funding strategies for financial institutions. He spent his first four years at the firm in the asset/liability management group. Prior to joining Sandler O'Neill in 2004, Hildenbrand worked as a financial analyst in asset/liability management at Tower Federal Credit Union in Maryland.

In 2021 Hildenbrand was elected to the Financial Managers Society board of directors. Additionally, he serves as treasurer on the board of directors for Liam's Room, a non-profit organization that focuses on pediatric palliative care, a specialized approach to medical care for children with serious illnesses.

Hildenbrand holds a Master of Business Administration degree in finance from Loyola College in Maryland and a bachelor's degree with a concentration in accounting and finance from Gettysburg College. He is a frequent speaker at industry conferences and seminars.

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